THE CHARTERED SURVEYOR

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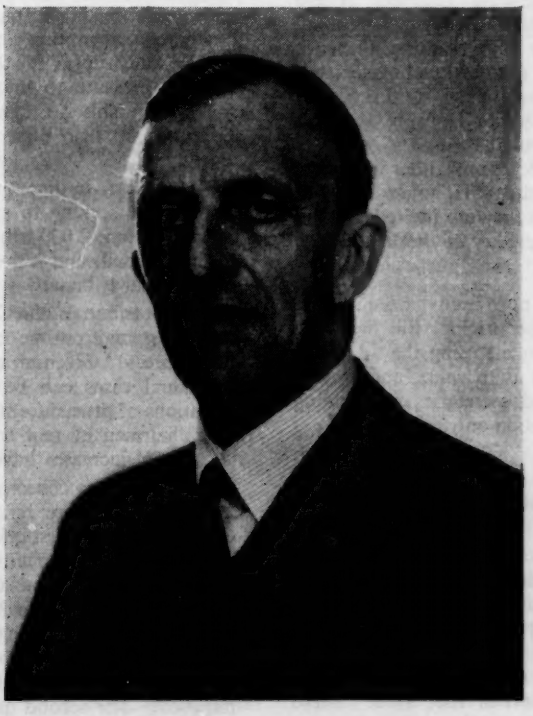
The President

JOHN DOUGLAS TRUSTRAM EVE

Mr. John Douglas Trustram Eve, who was elected President of the Institution on 13th June, 1960, was born in Bedford in December, 1897.

He was educated at Sandroyd School and Winchester College. On leaving school, he spent a few months with his firm before joining the Hertfordshire Regiment in 1916. He saw war service at home and in France and, after the war, remained for some years in the Territorial Army. In the Second World War, he held staff appointments in the Army as a major for three years.



The name of Eve is very well-known in the profession. The President's great-grandfather, Richard Eve, farmed the same farm in Silsoe, Bedfordshire, for 70 years as an annual tenant and was making tenant-right and rating valuations in the middle of the nineteenth century. The family firm of J. R. Eve and Son, of which Mr. Trustram Eve is senior partner, was founded by his grandfather, John Richard Eve, in Hitchin. Both his grandfather and his father, Sir Herbert Trustram Eve, were members of the Institution.

Many other Eves, directly descended from Richard Eve, have also been members of the Institution, including his second son, William Eve, who founded the firm of William Eve and Son, and Sir Herbert's brother, Gerald Eve, of Gerald Eve and Co., who was President in 1932. Indeed, the membership of the Institution at present includes eight members of the family.

Mr. Eve's practice covers a wide field, starting on the land agency side at Bedford and Hitchin, and extending to include rural and urban practice in many spheres throughout the United Kingdom; in particular covering town planning, compensation and rating.

His interest in the Institution started when he passed the Preliminary Examination and became a Student in 1915. In 1923 he was elected to the Junior Committee and was Chairman in the Session 1928–29, when the change-over from Junior Meetings to Junior Organisation took place.

He has served on many standing Committees of the Council, including the Parliamentary and the Professional Practice Committees, the former Valuation and Rating and Town and Country Planning Committees—and more recently their successor, the General Practice Committee—the Agriculture and Forestry and the Educational Policy Committees and the Branches and Public Relations Committee of which he was Chairman in 1957–59 and as such played an active part in the Annual Conferences held at Exeter University and St. Andrews University in 1958 and 1959. He has read many papers at meetings of the Institution, including two on different aspects of the Town and Country Planning Act, 1947—one covering development charges and the second dealing with mineral valuations and planning.

He was elected Member of Council as representative of

rating in 1948 and was elected a Vice-President in 1956. He became Senior Vice-President in 1959.

Mr. Eve has also given support to the affairs of two Branches of the Institution, first the Beds and Herts Branch and later the London (South-Western) Branch, of which he was Chairman for the Session 1951–52.

Mr. Eve has always shown interest in the general development of the profession of the land, and is one of the very few members of all three chartered bodies ; for he is also a Fellow of the Chartered Land Agents Society and was for two years Chairman of the Beds, Cambs and Hunts Branch, and a Fellow of the Chartered Auctioneers and Estate Agents Institute.

He is a member of the Farmers Club, the Central Association of Agricultural Valuers, and the Herts, Beds and Bucks Agricultural Valuers Association, of which he was President in 1953–54. He is also a member of the Council of the Town and Country Planning Association.

He is a member of the Rating Surveyors Association, of which he became the President in 1944. In 1947 he was appointed a member of the Inter-departmental Committee on the Rating of Site Values, whose report was published in 1952.

Mr. Eve is married and has two sons, the elder being with his father in the firm. His hobbies include dinghy-sailing and gardening.

Editorial Notes

Birthday Honours

Congratulations are offered to the following members whose names appeared in the Birthday Honours List. Mr. B. J. Collins (Fellow) County Planning Officer to Middlesex County Council, Mr. W. R. T. Eveling (Fellow), Assistant Chief Valuer, Inland Revenue, and Mr. A. F. M. Smith (Fellow), Director of Lands and Surveys, Kampala, Uganda—C.B.E. ; Mr. C. G. Libby (Fellow), Superintending Estate Surveyor at the Ministry of Works, Mr. L. F. Masters (Professional Associate), Superintending Engineer at the Air Ministry, Mr. O. W. Rowntree (Fellow), Divisional Land Commissioner at the Ministry of Agriculture, Fisheries and Food and Mr. W. J. Triggs (Professional Associate), Surveyors Department, New Scotland Yard—O.B.E. ; and Miss A. M. Lamplough (Fellow), Senior Housing Manager to the Crown Estate Commissioners—M.B.E.

Congratulations are also offered to any other members whose names appeared in the Birthday Honours List but who are not mentioned above; and they are invited to send particulars of their award to the Secretary of the Institution.

Building Societies Bill

The Building Societies Bill has now been passed by the House of Lords. Clause 13 of the original Bill has been amended by distinguishing between assessing the adequacy of a security and making a report as to value, and by disqualifying directors, managers and secretaries of building societies in respect of the latter function only.

During the Report stage, Lord Wise (Fellow) moved an amendment to the amended Clause 13 (now re-numbered 14) with the object of providing that valuations be made only by persons "professionally qualified" (instead of by "competent and prudent " persons).

Lord Hailsham, in reply to Lord Wise's amendment, said that the Government would have liked to have specified the professions which were meant, and to limit the preparers of such reports to members of them. There were a number of professional bodies who beyond all question could yield persons capable of delivering a report of that kind. There were a number of other bodies, about whom there may be a dispute. And there were probably a number of other professionally-qualified people who did not belong to any registered body.

Lord Hailsham continued : " There are only two ways out of this problem, apart from leaving it as it is in the Bill, which, on the whole, is what we have decided is best. Either we can state in the Bill a number of qualified bodies, which inevitably would create a feeling of injustice in those bodies whose names were not in the Bill—and equally in those persons who were not on the register of any registered body ; or alternatively it will be possible to leave it to the Registrar to prescribe the bodies, without specifying in the Bill what they should be. We think that this would be an invidious task to lay on the Registrar when the state of the profession, so far as I can ascertain, is as I have just described it."

First Report of the Council on Tribunals

" There appears still to be a good deal of misunderstanding and ignorance on the part of the general public about our functions and duties. . . . We are commonly described as the ' watch-dogs ' for the public and we must look to them in large measure to inform us of matters requiring to be watched." This is a conclusion reached by the Council on Tribunals in their First Report which has been published recently (H.M.S.O., 2*s.* 6*d.*)

The report outlines the general principles which the Council are seeking to apply to the procedure of tribunals (there are some 2,000 tribunals under the general surveillance of the Council) and it goes on to comment on the workings of particular tribunals.

On rent tribunals, the Council considers that much criticism of them stems from the fact that there is no uniform code of procedure. " Given an experienced chairman, the results in individual cases can be reasonably satisfactory, but wide variations of procedure still occur." The Council concluded that chairmen of rent tribunals are inadequately paid and substantial increases have been recommended.

Two questions concerning the constitution of agricultural land tribunals were referred to the Council by the Lord Chancellor. The first question concerned the age limits to be applied to the legal chairman and the landowner and farmer members of these tribunals : the Council recommended that no replacement of a chairman should be made which would have the effect of leaving him in office after the age of 75 ; in the case of members of the agricultural land tribunal, the Council recommended that an age limit of 70 should be imposed. The second question referred to the Council was whether land agents who have been placed on the panels from which the members of agricultural land tribunals are chosen should be prohibited from appearing in a professional capacity before such tribunals. The Council recommended, after consulting a number of bodies including the Institution, that a land agent who was a member of the regional panel for an agricultural land tribunal should be prohibited from appearing in a professional capacity before that tribunal, but that this prohibition should be limited to appearance

before the tribunal in the area for which the panel in question was constituted. This recommendation accorded with the view expressed by the Institution. In making the recommendation, however, the Council made it clear that they felt doubt about the possible effects of such a ruling on the working of the tribunals : " Land agents when sitting as members of a tribunal give their services voluntarily whereas when attending as expert witnesses they receive a fee. We recognise that when confronted by a choice between these two alternatives, some land agents may feel obliged to withdraw from the panels, a result which may have in some degree an adverse effect on the efficient workings of these tribunals."

Decimal Coinage and the Metric System

The Committees appointed by The British Association for the Advancement of Science and The Association of British Chambers of Commerce to report on the metric system and decimal coinage and its application to Britain have published their joint report under the title of " Decimal Coinage and the Metric System. Should Britain Change? " (Butterworth's Scientific Publication, price 7*s.* 6*d.*). The report is more than an academic enquiry into the desirability of a change to the metric system. Its emphasis is on the practicability in terms of economics of such a change. The report discusses all the implications, from the financial to the administrative and educational, and suggests ways of implementing the changeover. From their investigations the Committees conclude that decimalisation of the currency to be desirable and recommend a gradual change to a metric system of weights and measures. The Institution was among the professional societies which were consulted in connection with the preparation of this comprehensive report.

Receptions for New Members

The fourth and final reception for new members this session was held on Thursday, 2nd June, 1960. The ceremony was arranged to congratulate and welcome those new members elected since January, 1960. Sixteen new members were presented with their diplomas by the President to the appropriate accompaniment of the bells of nearby St. Margaret's Church, specially laid on, as the President commented. He urged the new members present at the ceremony to take an active part in the activities of the Institution, both through Headquarters and the local branch. Mr. Richard Caws (Fellow), Chairman of the Junior Organisation, welcomed the new members on behalf of the younger element in the Institution and the Secretary, Rear-Admiral P. W. Burnett, C.B., D.S.O., D.S.C., on behalf of the staff.

An opportunity was provided for the newly-elected members to see round the Institution building and to inspect the Institution's collection of silver and some of the valuable books in the Institution Library.

Faints

On the morning of Princess Margaret's wedding, the St. John Ambulance Brigade set up a First Aid Post at the Institution. A total of 42 members of the public were treated.

Meo Periculo

BY AN AGEING JUNIOR

Writing on Social Statics a hundred years ago, Herbert Spencer stated, " Education has for its object the formation of character." Seventeen hundred years earlier, the Emperor Trajan told Pliny that there was a shortage of surveyors, " but persons of integrity and skill in this art may be found most certainly in every province."

There seems to be no shortage of surveyors to-day. Why ? Perhaps there are too many. Whatever opinion is on that point, I suggest the intake and education of chartered surveyors in the last decade have been on ill-founded rules of entry. Five subjects in the G.C.E. and in they come. No need to scrutinize character or integrity. Get down to the exams. Cram the details. Learn them parrot fashion. Scrape through. Stay in the right office. Take a bit of responsibility. And there you are—a chartered surveyor. And there are thousands of us.

It is worth while looking at those vital years. What has been happening ? The typical subject, whatever it may be, is purely technical : no need to get down to the real fundamentals for the purpose of getting 55 per cent. The studious chap can get through " Agriculture " without setting foot on a farm ; " Valuations " means knowing which tables to use, and a knowledge of the current bank rate may be useful ; " Building Construction " is easy for a good draughtsman with a fair memory. " Quantities " requires a bit of a comptometer's brain. And so on.

Then there are all those legal subjects. One wonders sometimes why we bother with lawyers at all. One tries to learn a thousand references to unintelligible Acts of Parliament (drafted for the continuing livelihood of barristers) in the hope that " luck " may produce four questions to which answers can be given ; if not, " waffling " might do it. What happens in two years' time ? We all look it up, and in any case the law has changed again by then.

Have any of these pursuits over four or five years formed character ? Of course not. Character is either in a soul or it is not. It seems obvious that if this profession is to get anywhere at all, the credentials to entry are " integrity and character," not five subjects (what does the G.C.E. prove, anyway ?)

Is it possible to judge these qualities in a youngster of 17-20 years of age ? And who is capable of acting as judge ? Should not the exams be directed to the fundamentals of human and cultural existence and a thorough knowledge of what is called " Applied Economics " ? Have law papers by all means, but set twenty questions in each paper and let the fellow have with him the Statute Books ; he either knows where to find the answers or he does not ; if he cannot answer all twenty, he is not yet good enough on that score.

I asked my old principal some of these questions recently, and he just avoided the issue—said I was getting too big for my boots. That may be true, but now I've got him so annoyed that he and I are going to Bangor University at the end of August to debate some of these topics with such eminent people as Sir John Wolfenden and Mr. A. A. Part, Deputy Secretary at the Ministry of Education. They ought to know. Oughtn't you ?

This Conference at Bangor is as important to the 70-year-olds as the 30-year-olds, not to mention those in between ! (So that you are not ruled out on a technicality, your application will not be refused after 1st July, provided you apply before the University is full up !)

May I quote again from the second century: "That which is not for the interest of the whole swarm is not for the interest of the single bee".

Obituary

CECIL PENRY BATES (Member of Council)

It is with great regret that we record the death on 19th May, 1960, of Mr. Cecil Penry Bates, at his home at Keele, Staffordshire. He had not been well for some two years, but his death came suddenly as a result of a heart attack, at a time when it seemed that there was some improvement in his health.

Cecil Penry Bates (Jim to his friends) was born on 17th June, 1900. He was educated at Orme Boys' School, Newcastle-under-Lyme, and received his early mining training at collieries in Staffordshire and Warwickshire. He held the Statutory Certificates of a First-Class Colliery Manager and Colliery Surveyor and in 1926 he became a partner in the firm of W. J. and C. P. Bates, which had been founded by his father in 1918. After qualifying by passing the Direct Membership Examination in 1938, he was elected a Fellow of the Institution in the following year. He was a Member of the Institution of Mining Engineers, a Fellow of the Geological Society and a Member of the Association of Mining, Electrical and Mechanical Engineers.

After the death of his father, he carried on the practice, gaining a national reputation as a mining engineer, surveyor and valuer. He was consultant to many large concerns in the coal, ironstone and ball-clay industries, as well as being agent and mineral adviser to a number of large estates. He played a prominent part in the transition of the coal industry from private to public ownership and acted professionally for a number of public authorities in mining matters.

In addition to his professional activities, Mr. Bates had wide industrial interests. He was chairman of several companies, including Coalmoor Basalt, Limited, Coalmoor Holdings, Limited and Berry Hill (Engineers), Limited.

His family business of W. J. Bates and Sons (Newcastle) produced spathic iron ore, which is used throughout the world for the production of hydrogen, and he was proud of the fact that the barrage balloons of the last war were filled with hydrogen produced by a process for which he was largely responsible.

Mr. Bates was elected a Member of the Council in 1948 to represent mining surveyors and he was Chairman of the Mining Surveyors Committee from 1951 until he died. He did not spare himself, and his enthusiasm and indefatigable efforts in the interests of the Institution as a whole, and the mining surveyor members in particular, were characteristic of the man. The smooth manner in which the amalgamation with the Institute of Mining Surveyors was achieved was largely due to his leadership at the time.

He was Chairman of the Keele Parish Council and became a Commandant of the Special Constabulary in 1943, a rank he held until his death.

Cecil Penry Bates was a man of exceptional ability and a prodigious worker. His human approach and modesty made him a most popular figure and his death will be mourned not only by the mining surveyor members for whom he worked so hard, but by all the members and staff of the Institution who came into contact with him as well as by the mining fraternity who knew him and appreciated his technical ability and his friendly personality.

He had lived at Keele all his life, and he leaves a widow, one son and a daughter.

His death leaves a gap which it will be hard to fill.

G. A.

Life Member of Council

Mr. HAROLD WILLIAMS, O.B.E.

The third life member of Council, Mr. Harold Williams, O.B.E., who was elected at the Council meeting held on 5th October, 1959, was born in 1882. He started work in 1899 and was articled to the firm of Blake and Carpenter, Croydon. In 1908 a new firm was formed in which he became a partner, and in 1931 the firm of Harold Williams and Partners was formed, from which firm he retired at the end of last year but remains as a consultant to the firm.

Among his numerous activities in the Croydon Borough, he has acted in the capacity of surveyor to the Whitgift Foundation and for many Croydon charities.

In 1916 he was commissioned in the Royal Corps of Engineers and was attached to the 252nd Tunnelling Company, and was on active service in France. After coming out of hospital in 1917, he was seconded to the Ministry of Munitions and was in the Department of the Superintendent of Design (Trench Warfare) and at the end of the war was Chief Design Officer in that Department. He was awarded the O.B.E. (Military Division).

Mr. Williams was elected a corporate member of the Institution in 1904 and a Fellow in 1910. He is a Fellow of the Chartered Auctioneers and Estate Agents Institute and a Member of the Town Planning Institute.

Mr. Williams has always been very active in Institution affairs, both locally through the Surrey Branch and centrally at Headquarters. He served for many years on his Branch Committee and was Branch Chairman for the session 1950–51. The Surrey Branch have recently elected him a Life Member of the Executive Committee. Mr. Williams has represented the Surrey Branch on the Council since 1947. He has devoted a considerable amount of time and energy to the work of a number of the standing committees of the Council, and has been a member of the Finance, Parliamentary, Professional Practice and Town and Country Planning Committees. His particular interest, however, has been that of education for the surveyor's profession and for 20 years he was a member of the Institution's Education Committee.

In 1940 he became a member of the Board of Governors of the College of Estate Management, a post he still holds. He was President of the College for the years 1953–1955.

Institution Notices

THE ROYAL SHOW: CAMBRIDGE

The Royal Show will be held at Cambridge from 5th to 8th July, 1960. The Institution's luncheon and tea tent will be at Stand Number 12, Avenue J.

Table d'hote luncheons at 11*s.* 6*d.* a head and tea at 3*s.* 0*d.* a head will be available for members and their friends. In addition, morning coffee and biscuits at 1*s.* 0*d.* a head will be served and a licensed bar will be available.

The Cambridgeshire, Huntingdonshire, Norfolk and Suffolk Branch, who are responsible for the local organisation of the tent, are arranging a cocktail reception for the evening of Wednesday, 6th July, 1960. As distinct from official guests, tickets for the reception will be available to members and their friends at 12*s.* 6*d.* each.

NINTH INTERNATIONAL CONGRESS OF PHOTOGRAMMETRY, 1960

As foreshadowed in the May, 1960, issue of *The Chartered Surveyor*, details of the arrangements for the Ninth International Congress of Photogrammetry are now available. Between 5th and 17th September, 1960, there will be a full programme of technical sessions at the University of London, together with a series of technical visits combined with sightseeing. There is also a special programme for lady visitors.

Four post-Congress technical tours will start on Sunday, 18th September. These include visits to (i) Scotland; (ii) Wales; (iii) Oxford; and (iv) Cambridge. Full details, together with a registration form, can be obtained by writing to the Congress Director, 24, Bruton Street, London, W.1.

LIST OF MEMBERS, 1961

The Council have decided that the next edition of the List of Members should be published in 1961. Its form will be similar to the List for 1959–1960 save that some additional information will be included in regard to chartered quantity surveyors, as the Quantity Surveyors Committee, in the interests of economy and of the Institution as a whole, have agreed to forego the List which in the past they had published separately. A charge of 5*s.* per copy will be made to members for the 1961 List and its distribution will be limited to those members who ask for copies.

All members are being sent copies of their entries in the 1959–1960 List and they are requested to return these entries to the Institution as soon as possible after receipt, showing any corrections which may be necessary for the purposes of the 1961 List.

CRICKET

The following matches have been arranged for July, 1960, and spectators will be very welcome :—

13th July *v.* Chartered Auctioneers Institute on Hampstead Cricket Ground, Lymington Road, N.W.6. 11.30 a.m. start.

27th July *v.* Royal Institute of British Architects on Cheam Cricket Ground. 11.30 a.m. start.

PENSIONS FOR LAND AGENTS

The Institution welcomes the recent decision of the Country Landowners Association, following an approach originally made by the Chartered Land Agents Society, to sponsor a pension scheme for land agents who are members of the Institution or of the Society or of the Chartered Auctioneers and Estate Agents Institute.

During his career, a person qualified in rural estate management may at different times be employed by a landowner, a firm of agents, the Ministry of Agriculture, or a local authority or be self-employed (*i.e.*, acting for a number of owners). The pension scheme sponsored by the Country Landowners Association provides for the building up of a pension "brick by brick" throughout the agent's working life at all times when he is not in employment in which he has the benefit of an existing pension scheme.

An explanatory leaflet prepared by the Country Landowners Association is available on written request to the Institution by members of the agricultural division; it includes an application form for return to the Association's insurance brokers by 30th September, 1960.

The scheme sponsored by the Country Landowners Association should not be confused with the separate scheme sponsored by the Institution for the employees of firms of chartered surveyors, as announced in *The Chartered Surveyor* for December, 1959.

"HOW A HOUSE WAS BUILT"

Film on Building Construction available to Branches

A film entitled "How a House Was Built" has been made by Mr. Roger Emeny (Professional Associate) and, on the advice of the Educational Policy Committee and the Library Committee, the Council have agreed to purchase a copy of the film.

The film shows the main stages in the construction of a house, from stripping the vegetable top-soil to moving in the furniture. The running time is about 90 minutes and the film should be of particular interest to students of "Building Construction."

The film, which is of 16 mm. size, with sound-track, will be held for the Institution by the College of Estate Management, and will be available on loan to the Branches as may be required.

Application should be made to the Secretary, College of Estate Management, St. Alban's Grove, London, W.8.

JUNIOR ORGANISATION

Election of Committee: London and Unattached Section, Session 1960-61

The following members were elected in the recent ballot for the election of the London and Unattached section of the Junior Organisation Committee for the session 1960–61 : R. T. Bishop, B.A.,* R. A. S. Brock and G. H. B. Carter, M.A. (Professional Associates), R. H. Clutton (Fellow), A. H. P. Gillett, M.A., J. P. Hollamby, T. W. Kirby* and R. T. Marshall (Professional Associates).

* New members of the Committee.

Fees and Practice Joint Conference

REPORT NO. 11

In this series of reports on the work of the Fees and Practice Joint Conference, the word "Member" refers to members of all the four societies represented at the Conference, namely :—

The Royal Institution of Chartered Surveyors
The Chartered Land Agents Society
The Chartered Auctioneers and Estate Agents Institute
The Incorporated Society of Auctioneers and Landed Property Agents

A number of the matters dealt with by the Conference since the publication of Report No. 10 in the series have already been the subject of separate announcements in the four Journals ; for example, the announcements relating to Fees for Mortgage Valuations on behalf of Building Societies, the Fees and Commission paid by the Ministry of Works and the Opencast Coal (Fees) Regulations which appeared in the April, 1960, issues. The following further decisions of the Councils of the four societies in regard to other matter discussed between their representatives on the Joint Conference as a result of enquiries received since the last Report are now also published for the information of members.

Professional Charges

1. *Fees for selling houses on Building Estates*

The four Councils have reaffirmed their advice that in selling new houses for builders the ordinary Scale commission should wherever possible be charged by members, but that if circumstances make it necessary an appropriate reduction may be made in particular cases provided the remuneration is not unfair to other members.

Professional Practice

2. *Offices and Stands at Agricultural and Trade Shows*

The four Councils have reaffirmed the rule that, whereas members may arrange for their firms to have offices at Agricultural Shows provided they are strictly used as such, they must not allow their firms to have stands or offices of any kind at Trade Shows. For the purpose of this rule, the Annual Dairy Show at Olympia is deemed to be an Agricultural Show and the Annual Homefinders New Homes Show is, so long as it remains constituted as at present, deemed not to be a Trade Show.

3. *Offers of unsolicited information about property in the market when no instructions are held.*

A Rule of Conduct of the four professional bodies prohibits members from soliciting instructions in any manner whatsoever for work other than sales and lettings, except in the case of a client for whom the member regularly acts.

The four Councils have lately considered whether it is permissible for a member who happens to know that a particular property is in the market for sale or to let, but who has no instructions from the owner in connection with that property, to offer information about the property for which he has not been asked to persons he thinks might be interested in purchasing or renting it on condition that he is to be entitled to remuneration if they do acquire the property or take a lease of it.

The Councils are in no doubt that this practice must in general be treated as a breach of the Rule of Conduct referred to above.

They wish to make it clear, however, that if the information about the property is given to someone who regularly retains the member or his firm to look for additional premises or to negotiate their acquisition there would be no breach of the Rule. Similarly, it would not be contrary to the Rule for a member to reply in appropriate professional terms to advertisements of the kind sometimes seem in *The Estates Gazette* published by persons or organisations seeking the assistance of members of the profession in finding new premises or investment properties.

Personal Announcements

Mr. P. A. Davies (Professional Associate) has relinquished his position as chief quantity surveyor to Messrs. Frederick S. Snow and Partners, and has set up in private practice at "Chartland," Ferndale Avenue, Chertsey, Surrey, with effect from 1st July, 1960.

Messrs. D. M. Doig and Smith, chartered surveyors, formerly of 144, Wellington Street, Glasgow, C.2, have taken into partnership Mr. John MacFarlane (Professional Associate) who has been their principal assistant, and have now removed to 6, Lynedoch Place, Glasgow, C.3. The existing telephone number (Douglas 8907) is retained and the style of the firm remains the same.

Messrs. Eggar and Co., and Messrs. Curtis and Watson have amalgamated their practices with effect from 1st July, 1960. The new firm will carry on the business of surveyors, auctioneers, land and estate agents under the style of Messrs. Eggar and Co. (Incorporating Messrs. Curtis and Watson) at 74, Castle Street, Farnham, Surrey, Ackender House, Alton, Hants, and 36, Winchester Street, Basingstoke, Hants. The partners in Eggar and Co., Mr. E. A. Hopkins, F.A.I., Lt.-Col. W. A. Knowles, T.D. (Fellow), F.A.I., and Mr. J. P. Sudlow (Professional Associate), F.A.I., will remain with the firm and are joined by Mr. C. J. T. Watson, F.L.A.S., the surviving partner in Messrs. Curtis and Watson, who will remove their offices to Ackender House, Alton.

Messrs. Hunt and Nash, of 15, Crendon Street, High Wycombe, Bucks, have acquired the practice of Messrs. E. Franklyn Barnes and Sons, of 7, Mackenzie Street, Slough. Both practices will continue at High Wycombe and Slough under the style of Messrs. Hunt and Nash (incorporating E. Franklyn Barnes and Sons). With effect from 31st May, 1960, Mr. W. M. Creak (Professional Associate) who has been with Messrs. Hunt and Nash for some years, has been taken into partnership.

Messrs. Jones, Lang, Wootton and Sons, of King Street, London, E.C.2, and St. James's Street, London, S.W.1 (and in Australia, New Zealand and Canada) have, as from 1st June, 1960, taken into partnership Mr. L. F. Barr Smith (Fellow). Mr. Barr Smith was surveyor to the Provincial Insurance Company Limited and he will continue to advise them on property matters in conjunction with the firm who have acted for the Company for many years.

Messrs. ERIC LLOYD AND CO., of 80, Fleet Street, Torquay, have opened a branch office at 27, Victoria Street, Paignton.

Messrs. F. W. A. PICOZZI, chartered quantity surveyors, have taken into partnership as from 1st April, 1960, Mr. J. E. COE (Professional Associate). The style of the firm has been changed to Messrs. F. W. A. PICOZZI AND PARTNERS, Lloyd's Bank Chambers, Kettering, and 1, Knightsbridge Green, London, S.W.1. The senior partner of the firm, Mr. F. W. A. PICOZZI (Fellow), F.I.ARB., has recently changed his name by Deed Poll to Mr. WILLIAM ALEXANDER.

DOUGLAS E. STEER (Professional Associate), chartered quantity surveyor, has set up in private practice at 47, Goldsworth Road, Woking, Surrey.

Messrs. TAYLOR AND CO., of Chelmsford and Braintree and in association with Messrs. A. GLENNY AND SON at Billericay, have, as from 1st June, 1960, acquired the practice of Mr. CLAUDE C. COWELL, of 9, London Road, Maldon, Essex, who is retiring from business owing to ill-health. The firm will continue the practice from 9, London Road, Maldon, in addition to their other branches.

Mr. JOHN A. TIPPINS (Professional Associate) has relinquished his appointment with the District Valuer's office, Newport, Monmouth, and has commenced practice in partnership with Mr. JOHN G. WILKINS, A.A.I. The style and address of the firm is Messrs. TIPPINS and WILKINS, 1, Pump Street, Baneswell, Newport, Monmouth. (Telephone 67054.)

Branch Notices

BRANCH REPORTS

Gloucestershire, Somerset and North Wiltshire Branch.—The Annual General Meeting of the Branch was held at the Hare and Hounds near Tetbury and was attended by 54 members. Mr. P. J. KERR, M.B.E., T.D. (Fellow), was elected Chairman and Mr. L. F. DAVIES (Fellow), Vice-Chairman. The original book of minutes from the Branch's opening meeting in 1888, which was discovered in the archives of Messrs. J. P. STURGE AND SONS, was handed over to the Branch. Three of the original committee were members of this firm and the present Member of Council, Mr. W. S. GOODBODY (Fellow), is a partner now. The Branch is the oldest in the country. The meeting was followed by a visit to Badminton House, its stables, kennels and farms by kind permission of His Grace the Duke of Beaufort.

Hong Kong and China Branch.—The tenth Annual Dinner of the Branch was held in April, 1960, and was attended by 97 members and their guests. Among the guests were His Excellency, the Officer Administering the Government, The Hon. C. B. BURGESS, C.B.E., O.B.E., the Attorney-General and the Director of Public Works. The toast to the Institution was proposed by Mr. C. M. MCEWAN, M.B.E., and the Chairman of the Branch, Mr. F. SHANKS, O.B.E. (Fellow) replied. Lt.-Col. A. W. S. SMITH proposed the toast of "Our Guests" in a very amusing and witty speech and Professor W. G. GREGORY replied. (See also pages 45–6.)

Kent Branch.—The Annual General Meeting of the Branch was held at the Hilden Manor, Tonbridge, on 24th May, 1960. Mr. P. H. TOY (Fellow), was elected Chairman of the Branch for the ensuing year. Mr. TOY is the first quantity surveyor to be elected Chairman of the Branch. The Meeting was followed by a luncheon attended by some 70 members and guests. The Chairman of the Tunbridge Wells Chapter of the South Eastern Society of Architects, Mr. F. R. PITE, F.R.I.B.A., proposed the toast of the Kent Branch to which the Chairman replied. Mr. TOY then proposed the toast of the guests and Mr. S. J. THORNE, the Clerk of the Tonbridge Urban District Council, replied. In the afternoon members and guests visited Knowle, Sevenoaks, and were shown over the most interesting house and grounds.

Lancashire, Cheshire and Isle of Man Branch.—The presence of Mr. JOHN L. POSTLETHWAITE, B.ENG., a well-known Liverpool surveyor, in his capacity as President of the Institution made this year's Dinner a very special occasion since it is very many years since the Institution had a President from Liverpool.

Nearly 300 members and their guests attended the function at the Adelphi Hotel, Liverpool. The Principal Speaker, Brigadier C. O. PARKMAN, O.B.E., T.D., J.P., M.I.C.E., in proposing the toast to the Institution, mentioned the great importance he attached to the reclamation of land in the British Isles in particular that around the numerous estuaries. He referred to the omnibus activities of the Institution which covered all aspects of the surveying profession as opposed to the position in his own profession where each branch of engineering was represented by a separate body. The President, Mr. POSTLETHWAITE, responded on behalf of the Institution and gave a brief discourse on Institution affairs.

Mr. J. R. PATERSON, T.D. (Fellow), the Branch Chairman, in toasting the Guests, welcomed the numerous distinguished representatives of the City and the professions. These included the Lord Mayor of Liverpool, Alderman H. N. BEWLEY, C.B.E., who responded to the toast.

Warwickshire, Worcestershire and South Staffordshire Branch.—The Annual Dinner of the Branch was held at the Grand Hotel, Birmingham, on 7th April, 1960, at 7.30 p.m.

Among the principal guests were The Lord Mayor of Birmingham, Alderman JOHN H. LEWIS, O.B.E., J.P.; The Rt. Hon. LORD PAKENHAM OF COWLEY, P.C.; Mr. JOHN L. POSTLETHWAITE, B.ENG.; Rear-Admiral P. W. BURNETT, C.B., D.S.O., D.S.C.; Sir ALEXANDER KILLICK, C.B.E., D.S.O., M.C., M.A.; Sir EDGAR STEPHENS, C.B.E., D.L., Clerk to the Warwickshire County Council and the Branch Chairman, Mr. C. H. OSBORNE (Fellow).

The toast to the guests was proposed by Mr. H. DONALD DIXON, a member of the Branch Committee, and the Lord Mayor of Birmingham responded. The toast to the Institution was proposed by LORD PAKENHAM and the President of the Institution, Mr. JOHN L. POSTLETHWAITE, responded.

Four hundred and nine members and their guests attended this function, which was an all-time record.

OFFICERS AND COMMITTEES: SESSION 1960–1961

Kenya Branch.—At the Annual General Meeting of the Branch the following Officers and Committees were elected for the Session 1960–61: *Chairman*, Mr. D. DUNCAN; *Vice-Chairman*, Mr. J. LOXTON (Fellow); *Honorary Secretary*, Mr. H. L. DANNHAUSER (Fellow); *Honorary Treasurer*, Mr. G. W. TAME (Fellow); *Committee*, Messrs. D. W. CARBURY, A. H. WYNDHAM-LEWIS, E. D. HILL, G. F. WARD (Fellows); Messrs. S. N. MURRAY-WILSON, D. H. KYDD, E. J. A. KANE, A. R. NORTON, J. R. WALSHE, H. S. WILLIAMS, J. A. BRADSTREET, and J. T. E. JONES (Professional Associates).

Town Planning Joint Examination Board

Final Examination—Examiners' Report on Testimonies of Study (Part I) 1959

Special Testimony

The work submitted this year was of a good average level, with fewer attempts than usual by candidates who had not made adequate preparation. On the whole, candidates covered far too much paper with data that had little relevance or needed summarisation and analysis to be useful: few yet realise that one good analysis map may tell a briefer but more penetrating story than several "standard" surveys. Most reports were heavily overburdened with detail and stilted in language especially when closely modelled on statutory practice.

Overseas work was more mixed than usual in standard: few reports were models of brevity (one weighed over two pounds) while adverse criticism made in previous years about poorly-designed road layouts continues to be justified.

General Testimonies (Alternative A—Three drawn exercises): Sewage Works; Village Centre; Industrial Estate.

Fewer candidates are choosing this alternative, but the percentage of successes remained about the same as heretofore. Most candidates gave too little attention to the written reports, and this is causing the Examiners much concern. The reports carry a high proportion of the marks which can be won by a good solution. In a short space, they must state clearly the basis for the solution and the assumptions made, and it is important not to waste words on information which is given on the plan.

A few candidates put themselves at a disadvantage by omitting to inspect modern examples of sewage works or industrial estates in the new towns.

General Testimonies (Alternative B—Essay): New Town

The essays this year showed a very wide range. In the first place the subject set was a perfectly definite one on a proposal to site a new town requiring 5,000 acres of land in a rural area—what geographical factors should be considered. Yet many candidates chose to deal with topics of their own imagination, such as design and layout of towns, and many matters of planning detail such as housing density, provision of parks, playing fields, and so on.

Some candidates took a purely theoretical approach, and indeed some imagined conditions which could not possibly exist—such as a small island, off the east coast of an imaginary continent! Others envisaged conditions as they may or may not have existed two or three thousand years ago.

The best essays dealt first with general principles, then illustrated these by reference to the existing new towns in Britain or elsewhere, and finally deduced how far the factors mentioned had been considered. Such an essay demands illustration by maps and diagrams. Some candidates realised this and (*a*) showed the main factors operating in Britain as a whole (such as relief) and then (*b*) illustrated from one or two new town examples the influence of more local factors. Some candidates went further and illustrated the points by carefully chosen photographs.

It cannot be too strongly urged that candidates should consider the form of the question and make quite certain that their essay deals with the topic set by the examiner.

Golf: Report of Matches

THE CHARTERED SURVEYORS GOLFING SOCIETY

Spring Meeting

The Spring Meeting of the Society was held at West Hill Golf Club on 10th May, 1960, with the following results :—

Morning Round

Seniors: First, D. E. Jackson; Second, W. G. Edwards.

Juniors: First, M. W. Hudson; Second, M. R. Dunnett.

Afternoon Round

First Pair: B. D. Henderson and R. H. Baucher (The Howard Foursome Cups).

Second Pair: A. E. Lissaman and A. J. Young.

Edgson Cup

S.W. London Branch (W. G. Edwards, P. W. Grafton, R. H. Baucher and M. W. Hudson).

Veteran's Spoon

W. G. Edwards.

Match v. Lloyds

In the match between the Chartered Surveyors Golfing Society and Lloyds Golf Club which was played at Swinley Forest the surveyors beat Lloyds by 5½ to 2½.

Match v. Valuation Office

The result of the match between the Golfing Society and the Valuation Office held on 20th May, 1960, at Walton Heath Golf Club was the Society lost by 5½ matches to 2½.

ANNUAL MEETING OF QUANTITY SURVEYORS COMMITTEE

The Annual Golf Meeting of the Quantity Surveyors Committee was held at Woodcote Park on Thursday, 21st April, 1960, with the following results :—

Morning Round for the Walford Trophy

Winner—J. G. Osborne.

Runner-up—C. J. Eatough.

Ackland Memorial Trophy—G. L. Coates.

Sealed holes—C. T. Every and E. N. Harris.

Afternoon Round for the Palmer Tankards

Winners—C. F. Baker and J. Henderson.

Runners-up—C. T. Every and R. W. Gleed.

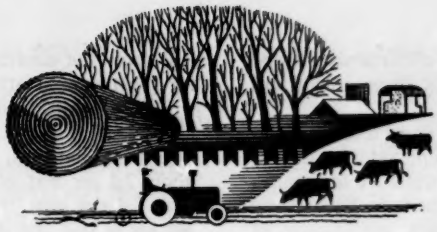
J. G. Osborne and L. E. Henderson.

Mr. W. James presided at the Dinner which was held in the evening.

PRESIDENT'S SIDE *v.* CAPTAIN'S SIDE

The annual match between the President's side and Captain's side was played at the Royal Liverpool Golf Club, Hoylake, on 14th and 15th May, 1960. The match resulted in a win for the President's side by 14½ to 8½.

On the Saturday evening a dinner was held at the golf club, with the President in the Chair, when the Society entertained the following Past-Captains of the Royal Liverpool Golf Club—Sir Rex Hodges, Messrs. Dan Tobey, A. J. Kentish-Barnes, Norman Roberts and John Graham.



AGRICULTURE AND FORESTRY

Research and the Agricultural Practitioner

By PETER J. M. ASTON, M.A. (Professional Associate), Q.A.L.A.S.

FORESTRY RESEARCH

The Forestry Commission's " Report on Forest Research for the year ended March, 1958 " (H.M.S.O., price 9*s.* 6*d.*) contains a wealth of interesting information on a wide range of subjects and can be unreservedly recommended for purchase to anyone closely concerned with forest or woodland management. The first part describes the Commission's current experimental programme, the second describes more fundamental research undertaken for the Commission by workers attached to Universities and other institutions, and the third reports the results of some individual investigations. The complete report comprises nearly 200 pages.

The material is extremely clearly presented and is liberally illustrated by tables and charts. It is not possible in this article to do more than refer to a few of the items covered and hope that those readers who are interested will buy this and subsequent annual reports to obtain the fully story.

Nursery Investigations

Experimental work on nursery problems is being reduced and the emphasis is being switched from the use of fertilisers and methods of partial sterilisation of the soil to long-term fertility maintenance, nursery weed control, and plant handling, with a special study of the nursery treatment of silver fir. Experiments have been conducted at 15 nurseries spread over 12 counties.

Best results with silver fir were obtained by chilling the seed for 24 hours with water at two degrees Fahrenheit before sowing, but stratification for four weeks before sowing at the beginning of April and early sowing of unstratified seed in January, February or early March also gave satisfactory results. Autumn sowings of oak gave as good results as spring sowings, but beech sown in the autumn did not always do as well. Corsican pine was shown to benefit from later sowing (early to mid-April) than Sitka spruce (late March) or *Tsuga heterophylla* (early March).

Spray irrigation during the dry spring greatly increased the yield of usable seedlings of Sitka spruce, *Tsuga heterophylla*, *Abies procera*, and *Thuja plicata*, but had no effect on Corsican pine, Japanese larch, birch, beech or oak seedlings. Later irrigation during the summer, which was wet, did not yield further benefit. The results were not quite as strongly in favour of irrigation as in the previous year, when seedlings of all species in the experiment responded to irrigation. Nevertheless, the increases in yield were quite sufficient to justify irrigation on a large scale.

Experiments have been carried out to compare undercut seedlings and transplants with untreated plants, and the nursery part of the investigations will by now have been completed. Although interim results are available, it is emphasised that no firm conclusions on undercutting can be made until the experiments have been extended into the forest and assessed for survival and growth.

In nursery manuring experiments using larger than normal dressings of nitrogen, phosphorus and potassium fertilisers on *Tsuga* seedbeds, only extra nitrogen had any appreciable effect on the growth of the seedlings. Comparisons between urea and nitrochalk as nitrogen manures showed that there was no advantage in using urea in place of nitrochalk.

Many chemicals were tested for weed control but none proved as cheap or selective as the mineral oils. Hand weeding at intervals of six weeks was found to involve nearly twice as much labour as weeding at intervals of two or four weeks. There was no difference between the latter owing to a dry start to the season, but in a wet season the four-week interval would probably be more laborious and costly than the two-week interval.

Plants tolerated storage in polythene bags for periods of two weeks up to six months, according to species and the condition of the plants at the time of lifting. Plants lifted while dormant stored better than plants lifted while flushing, and in some species the foliage must be dry when the plants are bagged. Spruces were outstanding in their ability to survive long periods of storage, and *Abies procera* seedlings were the least able to tolerate this method of storage.

Under moderately drying conditions (though not sunny or warm) seedlings began to lose their power of survival on transplanting after only two hours exposure of the roots. Six hours exposure resulted in nearly 100 per cent. casualties, but six hours exposure in damp, still conditions did no harm. The species tested were Corsican pine, Douglas fir and Lawson cypress.

Forest Investigations

In practice, cultivations in preparation for planting have been the minimum necessary for drainage or temporary vegetation suppression, but trials are under way in several forests to test the long-term effects of varying degrees of cultivation. It is possible that on many compacted or

impeded mineral soils more intensive soil disturbance may be justified by beneficial effects on crop root development and increment in later years.

Useful information is coming forward from trials on land which would normally be classified as unplantable, due to exposure or poor soil conditions, but the trials are necessarily long-term and it is proposed to supplement them by a survey of existing older woods on limiting sites, particularly as regards exposure, on private and Forestry Commission land throughout the country. Trials are also in hand to assess the possibilities of increasing the increment of established conifer crops by improving nutrition in the early pole stage of development, and to find out whether better nutrition would enable more demanding and higher yielding species to be grown on impoverished sites.

Active work on derelict woodland investigations has now ceased, and a full report of the work to date is in an advanced state of preparation. In further trials the V-Blade Scrub Cutter confirmed its early promise and showed itself capable, under suitable conditions, of site preparation by complete clearance or by clearance of strips through coppice or scrub.

It has been found that initial control of vegetation on fire traces can be obtained better by the use of 2,4–D/2,4,5–T mixtures, T.C.A. or " Dalapon " than by such substances as sodium chlorate, arsenicals, monuron or borax compounds, though the maintenance of a weed-free condition once cleared can be achieved with relatively low rates of application of the latter substances. The economics of chemical clearance are being studied, and chemical control of grass in newly planted areas is being investigated, the main compounds under test being dalapon and amino-triazol.

The hypothesis that the sturdiness of a plant is of more initial importance than its age or type, and that sturdiness is best measured by root collar diameter, is being studied in detail. It has been shown that root collar diameter is highly correlated with shoot weight, root weight and number of roots, and that root weight and number of roots are also highly correlated. It is hoped that further experiments will enable foresters in this country, as in others, to set standards of height and collar diameter for different planting sites. Nurseries, which differ in climate, soil fertility, etc., will then be able to determine the ages and types of plants necessary under their own conditions to produce plants of the desirable standards.

In a comparison (Forest of Ae) of two types of thinning, in Norway spruce 20 years old, quality class 3, moderately heavy low thinning gave 53 hoppus feet of measurable trees per acre over bark at first thinning, compared with 192 hoppus feet with heavy crown thinning. The number of unmeasurable trees (below 2½ inches quarter girth at breast height) removed was 360 and 8 respectively, and the number of measurable trees was 94 and 132 respectively.

Miscellaneous

To facilitate the study of the economics of growing coniferous crops, the present yield tables are being extended to show the development of each species under thinning regimes both lighter and heavier than those given in Forest Record Number 24, " Revised Yield Tables for Conifers in Great Britain." It is hoped that by the use of mathematical methods, as opposed to the empirical and graphical methods formerly used, the construction of these additional tables will be greatly speeded up. The tables will be published by species, or groups of species, as they are completed. Another extension to the published yield tables for conifers, which has been started, is the preparation of stand tables, which will show the distribution of trees by quarter girth classes, for given mean quarter girths.

Recent work has shown that the total area in woodland in Great Britain in blocks of one acre and over in extent is just over 4 million acres. This means that woodlands now cover about 7·1 per cent. of the land area in this country, compared with 6·4 per cent. in 1947, but despite this increase, Great Britain is still one of the most lightly-wooded countries in Europe. Slightly less than one-third of the total area consists of Forestry Commission woodlands, but the area of these has more than doubled in the past ten years and is increasing annually. The private woodland area has decreased in the last ten years, but the productive area of woodlands under private ownership is increasing.

Out of the total of 4 million acres, high forest accounts for 61 per cent., with coniferous woodland making up almost two-thirds of this total, coppice types account for 8 per cent. and the unproductive categories, *i.e.*, scrub, partially felled and felled woodland, make up the balance of 31 per cent. The area of unproductive woodland has dropped by 150,000 acres in the last ten years. The majority of the coniferous crops are under 40 years old, while the broad-leaved crops are predominantly classed as over 80 years or as uneven aged, with a relatively small area under 40 years old. In the 1–10-year age class, conifers account for 90 per cent. of the area, but in spite of this a greater area of broad-leaved species has been planted in the last 10 years than in any decade since 1900.

Drastic changes are proposed in the methods of conducting census work. Instead of continuing to do a complete census in a limited number of counties each year, at a rate which will enable the country as a whole to be covered in about 15 years, it is proposed to close down all field work for about 6 to 10 years and then to undertake a survey, on a sampling basis, of the country as a whole. The new procedure, which will reduce field work to about one-tenth, will be equally effective in providing a general summary of the situation for the country as a whole.

Following the satisfactory performance of the two-roomed office which was erected in 1954, plans have been made to erect a three-bedroomed dwelling-house from thinnings of Scots pine, Sitka spruce and Japanese larch. The interior walls will be lined with plaster-board backed with aluminium foil, and according to tests carried out by the Building Research Station, the thermal insulation of this type of construction is slightly superior to that given by 11 inch cavity brick walls.

Experiments are in hand at nine sites in Scotland and 11 sites in England and Wales for determining the life of fencing posts treated with one or other of two wood preservatives. In Scotland, posts of birch and Sitka spruce 5 feet 6 inches long by 3 to 4 inches top diameter have been used ; one-third being treated with a proprietary water-borne preservative, one-third with creosote, and the remainder being left untreated to act as controls. In England and Wales, the experiment has been laid down on similar lines, the species used being Scots pine (at all sites) and one of the hardwoods likely to be available locally such as birch, sycamore, alder, ash and elm.

Unpeeled logs stacked in piles under shade in the spring have been found to lose weight by up to 5 per cent. after one month, and up to 20 per cent. by the end of the summer, but different species vary considerably. Ash lost only 4 per cent., oak 7 per cent., birch 11 per cent., beech, sweet chestnut, sycamore and elm 14–22 per cent. If stacked in open clearings, slightly greater losses in weight were experienced.

EXPERIMENTAL FARM BUILDINGS

The recently announced scheme for grants of up to 50 per cent. on farm buildings of an experimental nature is an interesting development. The scheme is to be administered by the Agricultural Research Council, through their Farm Buildings Unit located at Silsoe, Bedfordshire, and this unit is to be expanded by the recruitment of an architect, a livestock officer and an agricultural officer, the last-named post having been advertised in the April, 1960, issue of *The Chartered Surveyor*.

It is difficult to express an opinion on this development until it can be seen how the proposals are interpreted and work out in practice. If the experiments are properly conducted and controlled, as one must assume they will be, thus involving the unit's staff in a considerable amount of work on each farm concerned, it seems that the number of persons able to benefit from the scheme must be necessarily quite small, and the success or failure of an application will presumably depend as much on how the proposal fits into the unit's programme as on its intrinsic merits. On the other hand, great benefit can accrue to agriculture in general, and hence to all landowners and farmers, from the results of an effective farm buildings research and development programme, of which the present scheme forms only one part, and the success of the scheme should not be measured in terms of financial assistance received by a limited number of individuals.

It is, however, clear that the new scheme in no way constitutes the setting up of a farm buildings research and development centre of a kind which many people believe the present situation calls for, and which the Farm Buildings Association continues to advocate. When there exists an organisation capable of producing a comprehensive annual survey of farm building research and development work on the lines of the Annual Report on Forest Research, it will be possible to feel that substantial progress is being made. That day appears at present to be a long way off.

Agriculture and Forestry Announcements

STANDARD COSTS

Farm Improvement Scheme and Livestock Rearing Grants

The Livestock Rearing Land Improvement Grant (*Standard Costs*) *Regulations*, 1960 (S.I. 1960, No. 930, 1*s.* 0*d.* net) and *The Farm Improvements* (*Standard Costs*) *Regulations*, 1960 (S.I. 1960, No. 931, 1*s.* 0*d.* net) replace with modifications the existing regulations on this subject in relation to works or improvements for which authority to start work or approval is given on or after 7th June, 1960. Apart from a number of increases in the standard costs, the principal changes are :

(*a*) standard costs are specified for the first time for a suspended floor and guard-rail or hand-rail ;

(*b*) new standard costs are specified for a general purpose building and for a liquid manure tank and cover ;

(*c*) a separate, and lower, standard cost is specified for a Dutch barn or a covered part of a cattle yard or an implement shed of which the stanchions are of round wood ;

(*d*) a standard cost is no longer specified for a concrete bed for salt-glazed stoneware piping or cast-iron piping ;

(*e*) the method by which the standard cost is calculated when fees for professional advice or assistance have been incurred provides for a 5 per cent. increase in the case of any wholly prefabricated building other than a Dutch barn or implement shed ;

(*f*) these regulations require that plywood shall be preserved in the same way as other wood and not brushed or sprayed externally as previously required.

Leaflets, setting out the new standard costs in full, may be obtained from the local offices of the Ministry of Agriculture, Fisheries and Food, the Department of Agriculture and Fisheries for Scotland and the Ministry of Agriculture in Northern Ireland. The leaflet relating to the farm improvement scheme is Form F1/1 (revised May, 1960) ; and the leaflet relating to grants for improving upland livestock-rearing land in England and Wales is Form HF1.1 (revised April, 1960).

CEREALS DEFICIENCY PAYMENTS IN 1960–1961

A joint announcement by the Agricultural Departments in Great Britain states that the Cereals Deficiency Payments Scheme (1959 edition) will be substantially unchanged for the 1960–1961 cereal year. A supplement covering necessary changes will be published shortly. An explanatory leaflet entitled " Growers' Guide to the Cereals Deficiency Payments Scheme " setting out the main conditions governing deficiency payments on wheat, rye, barley, oats and mixed corn can be obtained from the divisional offices of the Ministry of Agriculture, Fisheries and Food in England and Wales and from the Department of Agriculture and Fisheries for Scotland, Broomhouse Drive, Edinburgh, 11. Somewhat different arrangements, of which details will be announced separately, will apply to Northern Ireland.

INFESTATION CONTROL LABORATORY : SCIENTIFIC WORK

The Minister of Agriculture, Fisheries and Food has appointed a Committee, under the chairmanship of Professor J. B. Cragg, B.SC., M.SC., Professor of Zoology in the University of Durham, to advise and report annually on the programme of experimental and research work of the Infestation Control Laboratory of the Ministry. The Laboratory is part of the Advisory Service and Infestation Control Division and is situated at Tolworth, near Surbiton, with a field station at Worplesdon, near Guildford.

CHARITY COMMISSION

In the matter of The Daniel Watney Prize Charity

The Charity Commissioners for England and Wales give notice that they have made an Order establishing a Scheme for the regulation of the Charity.

Copies of the Order and Scheme can be seen any weekday (except Saturdays) between 10 a.m. and 4 p.m. at the Commissioners' Office at 14, Ryder Street, St. James's, London, S.W.1, where copies can be purchased (price 1*s.* each) quoting A-118840.

VALUATION · HOUSING · PLANNING

Lands Tribunal Decisions

Reviewed by W. M. HATTERSLEY, B.Sc. (Professional Associate)

(1) COMPENSATION FOR INJURY FROM LAND DRAINAGE WORKS

Under the provisions of section 34 (3) of the Land Drainage Act, 1930, a drainage board are liable to make full compensation to any person who sustains injury by reason of the exercise by the board of any of their powers under section 34, which provides, *inter alia*, that the board shall have power to maintain or improve existing works and to construct new works. However, in addition, section 38 (1) provides :—

> " A drainage board, without making payment therefor or giving compensation in respect thereof, may appropriate and dispose of any shingle, sand, clay, gravel, stone, rock or other matter removed in the course of the execution of any work for widening, deepening or dredging any watercourse, and may deposit any matter so removed on the banks of the watercourse or use it in any other manner for the maintenance or improvement of those banks or for the purposes of the execution of any other work which the drainage board have power to execute."

The true construction of this sub-section, in so far as it limited the compensation that would otherwise have been payable under sub-section 34 (3), was considered by the Court of Appeal, on appeal by case stated from the Lands Tribunal, in the case of *Jones* v. *Mersey River Board* ((1958) 9 P and C.R. 13). The case was concerned with whether the injury suffered by the claimant consequent upon the deposit on his land of soil removed by the Board in the process of widening and improving the watercourse of the River Alt was compensatable. The Board denied liability to pay compensation, relying upon the provisions of section 38 (1). The Tribunal, at the hearing of the preliminary point of law (Ref./54/1956 dated 28th November, 1956) decided, *inter alia*, that :—

> (i) the Board were not liable to pay compensation for injury sustained due to the deposit of material upon the banks of the watercourse as the words " without making payment therefor or giving compensation in respect thereof " were intended to govern all powers conferred by section 38 (1) ;
>
> (ii) the powers of the Board to deposit material on the banks were not limited to cases in which by so doing they would maintain or improve those banks ;
>
> (iii) the word " banks " should be given only a limited meaning.

The Court of Appeal, however, reversed the decision of the Tribunal on these points and decided, on the first point, that the words " without making payment therefor or giving compensation in respect thereof " related only to the material (*i.e.*, shingle and so forth) with which the section was concerned. " Therefor " and " thereof " referred to the material thereafter set out and not the operation. *Per* Jenkins, L.J. " Prima facie, the matter in respect of which compensation is excluded seems to me quite clearly to be the physical materials removed in the course of the execution of the work referred to, and nothing else. . . . It seems to me that any doubt on this question is really set at rest when one comes to the concluding words of the sub-section, ' or for the purposes of the execution of any other work which the drainage board have power to execute'. That does not mean that, without paying any compensation at all for their action, the board may use the material in question for the purposes of the execution of any other work which they have power to execute. In my judgment, it can only mean that they may use the materials so removed for those purposes, without making or giving any payment or compensation for the materials so used, the ordinary right to compensation being excluded only so far as the materials used are concerned."

As a matter of construction on the second point the court decided that the association of the words " in any other manner," following the words " and may deposit any matter so removed on the banks of the watercourse," did indicate that the deposit should be " for the maintenance or improvement of those banks."

On the third point, the meaning of the word " banks " in the sub-section was considered at some length even though it was really considered unsuitable for determination as a preliminary point as in the last resort the matter was very largely a matter of fact. The dictum of Curtis, J., in *Howard* v. *Ingersoll* (54 U.S. 381), an American case, that " the banks of a river are those elevations of land which confine the water when they rise out of the bed " and the observations of Martin B, in *Monmouthshire Railway and Canal Company* v. *Hill* (1859, 28 L.J. Ex. 285) that " when you speak of the banks of a canal, you mean the land on either side of the canal which confines the water. There are banks of the canal, therefore, on both sides of it, and when you speak of the banks, you mean the substantial soil which confines the water . . . " were applied. In his judgment Jenkins, L.J., held that " . . . the expression ' banks ' in section 38 (1)

means so much of the land adjoining or near to a river as performs or contributes to the performance of the function of containing the river. I think that that is as good a definition as it is possible to provide *in vacuo* ; but I emphasise that its application in any particular case must depend to a great extent on the particular facts of the case—the character of the river, the character of its surroundings, and, no doubt, other considerations as well."

It is thus clear that the compensation excluded by section 38 (1) is, for practical purposes, only of a very limited nature. The liability of the Board under section 34 (3) to make full compensation for any injury suffered from the operation of the widening, deepening or dredging of a watercourse applies whether or not the spoil is deposited on the banks of the watercourse. Technically compensation would also be payable for the matter removed from the watercourse if it were not deposited upon or used for the maintenance or improvement of the banks or for the execution of other authorised works.

In the *Jones* case, the spoil was deposited upon 2·7 acres of land in 1953, but was not spread as at that time the Board considered they were not liable to pay compensation and on this assumption would only spread out and level the soil, *ex gratia*, provided no claim for compensation was made. However, by the time the matter came before the Tribunal for the second time to determine the amount of compensation payable, some six years had passed (Ref./54/1956 dated 14th April, 1959) and so the actual loss sustained for these years had to be taken as the measure of damage during that period. In addition, if the spoil remained *in situ*, future losses had to be estimated and quantified once and for all. The sum of these two figures resulted, in the Tribunal's view, in a grossly inflated figure (£1,050 was awarded on this basis), as had the Board had statutory powers to resume possession for this public purpose, the Board's liability would have been reduced by perhaps 75 per cent. On the alternative assumption that the spoil was spread, which the Tribunal considered desirable on the grounds of public expediency, even though only temporary future losses would result, the total amount payable came to an even higher figure (£1,200) due to the larger area affected by soil spreading.

The Tribunal commented that it was unfortunate that the parties did not " agree to differ " over the liability for compensation and come to an agreement, without prejudice to the legal rights of the parties, on the practical steps necessary to reduce the measure of damage. *Per* the Tribunal : " Mr. Jones was prepared to permit spreading on a low part of his land without compensation or alternatively on the land adjoining the river subject to payment of compensation and it was the Board who declined to accept either of these two alternatives. Had the work been done in 1954–55, the compensation would have been considerably reduced . . . while in normal circumstances it is the duty of a claimant to mitigate damages as far as possible, the aggravation of damage in this case cannot be ascribed solely to the intransigence of the claimant."

Normally, claims for compensation under the Land Drainage Act, 1930, are concerned with compensation payable under section 34 (3). However, in order to obtain compensation under section 34, it is necessary that " the injury suffered would have been actionable but for the provisions of the section." (See *Oakes* v. *Mersey River Board*, Ref./25/1957.)

In *Scutt and Screeton* v. *Lower Ouse Internal Drainage Board* (Ref./74 and 75/1952) the claimants claimed compensation for damage to their farms caused by the flooding of a watercourse. This was caused by the blockage of a culvert by reeds and grass, which had been cut by a contractor, employed by the Board to clean the dyke, lodging in a screen placed by the Board at the upper end of the culvert. The Tribunal found that the contractor and the Board had been negligent in the manner in which the work of cleaning the dyke of reeds had been carried out and in taking appropriate action when notified that the flooding was occurring. Accordingly the Board were held liable for the damage. Another case concerning flooding was that of *Birch* and *Birch* v. *Ancholme Drainage Board* (Ref./46/1957) where the two watercourses draining the land affected had outfalls which discharged into the New River Ancholme and were protected by timber flap doors, designed to close when the level of the water in the river rose above that in the watercourses. On this occasion, when there was heavy rainfall, it was found that the flaps had been left propped open. The Board were held liable for the damage resulting from the increased flooding caused by the flap doors being propped open and not working properly.

In *Lovegrove (A. H.) and Son* v. *Isle of Wight River Board* (Ref./77/1953) compensation was awarded where, as a result of the Board's improvements in the catchment area, increased flooding of the claimant's land had resulted due largely to the inadequacy of the main outfall. However, a claim for loss of cattle due to the inadequacy of a guard fence erected by the Board after the widening and deepening of existing silted channels, which the claimants contended was a trap in which cattle would and did get caught due to the existence of " blue slipper " clay, was dismissed as the claimants, as occupiers, could not themselves avoid responsibility for ensuring the safety of their cattle.

The most recent case of *Stuckey, Stuckey and Litchfield* v. *North Somerset Drainage Board* (Ref./109/1959) concerned a claim for compensation on account of alleged damage and deterioration in the value of two fields by reason of the construction of a dam and sluice by the Board in a rhyne into which the fields drained in order to improve the drainage of the area. The claimant contended that the result was that his fields no longer drained properly. It appeared that there had been an experimental period during which the fields did suffer and the Tribunal awarded compensation accordingly. However, it was not considered that any permanent damage had been done. The only difference was that the drainage control of the area was now being carried out by the Board instead of individual farmers and the Tribunal was far from satisfied that this alteration of control could adversely affect the value of the fields in question. Accordingly, no compensation was awarded under this head.

As soon as injury is sustained by reason of a board exercising their powers under section 34 of the Land Drainage Act, 1930, a right to compensation arises. The right to claim, however, is subject to the provisions of section 2 (1) (*d*) of the Limitation Act, 1939, which means that a claim must be made within six years of the doing of the work giving rise to the injury (cause of arbitration) otherwise the claim is statute barred (see *Vincent* v. *Thames Conservancy*, Ref./7/1959).

(2)E QUIVALENT REINSTATEMENT — RULE 5

In order to qualify for compensation to be assessed on the basis of the reasonable cost of equivalent re-instatement in accordance with the provisions of Rule 5 of section 2 of the Acquisition of Land (Assessment of Compensation) Act,

1919, the following three conditions must be satisfied :—

(1) The premises must be " devoted " to a special purpose which qualifies under the Rule, that is to say " a purpose of such a nature that there is no general demand or market for land for that purpose."

(2) It must be established that, but for the compulsory acquisition, the premises would continue to be devoted to the special purpose.

(3) There must be a *bona fide* intention to re-establish the use of the premises elsewhere.

In the two previous cases[1] that have been reviewed in this series, the Tribunal was principally concerned with whether conditions (1) and (3) had been satisfied. In the recent case of *The Incorporated Society of the Crusade of Rescue and Homes for Destitute Catholic Children* v. *Feltham Urban District Council* (Ref./139/1958), however, it was the second condition that was in question. The circumstances were somewhat unusual in as much as the compulsory purchase arose out of the service of a purchase notice on the council under the provisions of sub-section 19 (2) of the Town and Country Planning Act, 1947, which of course implied that the land had become incapable of reasonably beneficial use in its existing state.

The property concerned was a children's home which had been owned by the Society for over 50 years, but which was situated only about 1,000 yards from the end of the No. 5 Runway of London Airport. This runway was completed in 1953 and pointed directly at the property. Arising out of the construction and use of London Airport and in particular this runway, conditions were produced which made the use of the property for institutional purposes almost impossible. A planning application for re-zoning and change of use of the property to industrial purposes was refused on appeal by the Minister and so the Society was deprived of any opportunity to dispose of the premises for non-institutional purposes. The Society was unable to find a purchaser for institutional purposes and only remained in occupation because it had insufficient funds to build alternative accommodation.

The Tribunal was satisfied that if no purchase notice had been confirmed and funds had been available, the Society would have gone " to-morrow." However, it was also satisfied that, in the absence of funds, the Society would have remained where it was in spite of the inconvenience and even danger to the staff and children as the object of the Society had to be carried on.

For the acquiring authority it was argued that the condition in section 19 (1) (*a*) that the land has become incapable of reasonably beneficial use in its existing state was in conflict with the condition in Rule 5 that but for the compulsory purchase the premises would continue to be devoted to their special purpose. The Tribunal did not agree with this view as although the premises may have become incapable of reasonably beneficial use, it was still capable of some use even if it was not reasonably beneficial. The material word was " reasonably." It was a case really where the compulsory purchase did not deprive the claimants of something they wished to retain, but enabled them to get rid of something no longer reasonably suitable for their purpose but which must be retained until sufficient compensation was received to enable them to re-establish the home elsewhere ; an anomaly but one which had no bearing on the legal issue. A notice to treat had in effect been served and the sole question was whether the provisions of Rule 5 applied to the case.

The Tribunal was satisfied that the Society had acted in good faith and had not remained in occupation after the deemed date of the notice to treat solely for the purpose of fulfilling the conditions of Rule 5. With its outstanding liabilities it could not proceed with a scheme for procuring alternative accommodation because an open market sale of the existing property would produce insufficient funds.

The Tribunal found that, but for the notice to treat, the premises would continue to be devoted to the purposes envisaged under Rule 5 and accordingly, as the other conditions were fulfilled, held, as preliminary point of law, that the case fell to be assessed in accordance with Rule 5.

Another recent case on Rule 5 was *Trustees of the Central Methodist Church Todmorden* v. *Borough of Todmorden* (Ref./39/1958), which also arose out of the service of a purchase notice and related to chapel premises which were being used as a school meals centre.

Although the acquiring authority conceded that such a use was one for which there was no general market, the Tribunal held that Rule 5 did not apply for the following reasons :—

(i) Limitation to its present use or something similar by virtue of the provisions of the use classes order under the 1947 Act did not constitute " devotion " to that use for Rule 5 purposes. An element of intention must be imported and of this there was no evidence, especially in view of previous negotiations to dispose of the premises.

(ii) Discontinuance of the use of the premises as a Church was not the outcome of the notice to treat but of previous decisions.

(iii) Although re-instatement was *bona-fide* intended, it was not of the Chapel premises alone, but a consolidation of two congregations, which was decided upon prior to the notice to treat.

In passing, it is of interest to note the earlier case of *London Diocesan Fund* v. *Stepney Corporation* (Ref./4/1953) which concerned the acquisition of a mission hall and two adjoining dwelling-houses both of which interconnected with the hall. One house was used for purposes connected with the mission hall whereas the other was used as a dwelling-house for the caretaker.

It was admitted by the acquiring authority that compensation should be assessed in accordance with Rule 5 for the mission hall and dwelling-house used in connection therewith, but it was contended that it did not apply to the caretaker's house, although it might have done if the caretaker's quarters were embodied in such a hall or within the curtilage of a building standing in its own grounds.

The Tribunal decided that the whole premises were occupied by the claimants as one building for the purposes of a mission hall and that it was immaterial that, by blocking up the means of inter-communication, it would have been possible to dispose of the caretaker's quarters as a separate dwelling-house. The accommodation for the caretaker, whether structurally integral with the premises as a whole or capable of being separated from them and occupied independently, was so " highly desirable " as to be virtually essential for administrative purposes. Accordingly, compensation for the whole of the premises on the basis of Rule 5 was awarded.

FOOTNOTE

(1) *The Trustees of Howrah House* v. *London County Council* (Ref./118/1955). *The Chartered Surveyor*, October, 1958, page 196.

Edge Hill Light Railway Company v. *Her Majesty's War Department* (Ref./79/1954). *The Chartered Surveyor*, May, 1956, page 586.

Rating Surveyor's Diary

COURT OF APPEAL RATING DECISIONS

Rateable Occupation

New Forest Golf Courses not Rateable

Peak (Valuation Officer) v. *Burley Golf Club; Harding (Valuation Officer)* v. *Bramshaw Golf Club, Ltd.*

(Court of Appeal, 29th, 30th, 31st March, 1960.) (53 R. & I.T., p. 277 (5th May, 1960).)

Occupation—Exclusive possession—Land open to the public—Crown land subject to rights of common—Crown licence to clubs to maintain and use golf courses thereon—No power to exclude commoners or public.

Unenclosed areas of land in the New Forest owned by the Crown which were the subject of commoners' rights of pasturage, etc. and were open to the public, were used by two golf clubs under licences from the Forestry Commissioners, which permitted them to maintain golf courses thereon (shown on plans, but in one case with boundaries not demarcated) and use them for playing golf subject to conditions. In both cases payments were to be made to the commissioners and the land was to be reinstated if the licences were withdrawn. In one case there was to be no interference with the pasturage, *i.e.*, the rights of commoners, and the other expressly did not afford an exclusive right of user over the land. The clubs maintained and used the courses for playing golf and charged green fees to persons playing, but took no action when persons playing refused to pay. The public parked caravans and picnicked on the land and forest ponies wandered over it.

Held: The golf clubs were not in rateable occupation of the golf courses since they had no exclusive possession thereof by reason of their inability to exclude the public and of the rights of the commoners (and also in one case no defined course).

The Hypothetical Tenant and His Rent

No Bidders against Plymouth Argyle

Tomlinson (Valuation Officer) v. *Plymouth Argyle Football Company, Limited and Plymouth City Council.*

(Court of Appeal, 31st March, 1st, 11th, 12th April, 1960.) (53 R. & I.T., p. 297 (12th May, 1960).)

Annual value—Hypothetical tenancy—Hypothetical tenant—Sole possible tenant—Football ground—Professional football club.

Held: The case stated by the Lands Tribunal on appeal must be sent back to the tribunal to redetermine the value—

(i) on the basis that the club was the only possible tenant (as on the evidence it was, since any club formed to take its place if it dissolved would also be a sole possible tenant not simultaneously in existence) and that it would have an equally strong bargaining position with the city council in negotiations for a tenancy (one needing a tenant for a valuable hereditament costing thousands of pounds annually in repairs, the other depending for its existence on its taking the hereditament);

(ii) having regard to all relevant considerations including the history and finances of the club, its rent paid for a generation at its highest of £664 in very special circumstances, and its being kept going at times only by benefactions and public support;

Dicta of Scott, L.J., in *Robinson Bros. (Brewers), Limited* v. *Houghton and Chester-le-Street Assessment Committee* ((1937), 26 R. & I.T. 231; 8 D.R.A. 173) applied; but

(iii) *semble*, deriving little help from the lease (apart from its indicating that the parties could arrive at a sensible arrangement when required and the club could pay £664 rent), and certainly paying little or no regard to the £500 valuation.

No allowance for Security of Tenure on Long Lease

Humber Limited v. *Jones (Valuation Officer) and Rugby Rural District Council.*

(Court of Appeal, 6th, 7th April, 1960.) (53 R. & I.T. p. 293 (12th May, 1960).)

Annual value—Hypothetical tenancy—Circumstances of letting—How far actual and how far hypothetical—Large car assembly works—Tooling up costing £1½ million—Full productivity only attainable after five years—Assumption that ownership or lease of premises not possible to occupiers.

Evidence of value—Rents—Adjustment—Rent on long lease—Large car assembly works not lettable on yearly tenancy—No allowance for greater security of lease.

Held: The decision of the Lands Tribunal must be upheld as one on a question of fact disclosing no misdirection or error in law, since there was necessarily artificiality in the rating world of the hypothetical letting, and the hypothesis laid down was not erroneous.

Derating

Research Establishment for Prototype Vehicles not entitled to relief

Harry Ferguson Research Limited v. *Dawkins (Valuation Officer); Harry Ferguson Research Limited* v. *Warwick Rural District Council.*

(Court of Appeal, 8th, 11th April, 1960.) (53 R. & I.T., p. 310 (19th May, 1960).)

Partial exemptions—Industrial hereditament—Primary purposes of user—"Purposes . . . not those of a factory or workshop"—Research establishment—Production of prototypes to test ideas—Aim to produce a design and blue-print—Rating and Valuation (Apportionment) Act, 1928, s. 3 (1), proviso.

Held: The hereditament was not an industrial hereditament within the meaning of section 3 (1) of the Rating and Valuation (Apportionment) Act, 1928, since it was primarily occupied and used for purposes which were "not those of a factory or workshop," *i.e.*, for the research and experimental work of a research establishment.

Grove v. *Lloyd's British Testing Company Limited* applied.

Decision of the Lands Tribunal ((1959), 52 R. & I.T. 498) reversed.

Per Willmer and Devlin, L.JJ.: "The word 'purposes' . . . connotes the subjective intention of the person occupying or using the hereditament [*i.e.*] the purposes of the occupiers."

Per curiam: Once it is established that a hereditament is a factory or workshop within the meaning of the Factory and Workshop Act, 1901, whether the work done thereon is done by way of trade or for purposes of gain is of no materiality in considering whether the hereditament is primarily occupied and used for purposes not those of a factory of workshop under section 3 (1), proviso, of the Rating and Valuation (Apportionment) Act, 1928.

Guinness Transit Sheds held to be part of a Dock Undertaking

Duckworth (Valuation Officer) v. *Guinness Importers, Limited*; *Thomas (Valuation Officer)* v. *Guinness Importers, Limited.*

(Court of Appeal, 8th, 11th, 12th May, 1960.) (53 R. & I.T., p. 313 (19th May, 1960).)

Partial exemptions — Freight-transport hereditament — (i) "Occupied and used . . . as part of dock undertaking" —"Undertaking as part thereof a dock"—Dock premises leased—Separated from dock by narrow strip of land—Strip used under licence only—(ii) Dock undertaking—Business—Substantial proportion "concerned with . . . merchandise not . . . intended for the use of the undertakers"—Subsidiary company acting as agents for parent company possessing goods—Shipping, unshipping and delivering—Not for use of the subsidiary—Rating and Valuation (Apportionment) Act, 1928, *s.* 5 (1) (3).

Appeal to the Court of Appeal—Jurisdiction—Points not expressly decided in Lands Tribunal's decision—Rejection of party's submissions inferred from question of law posed—Lands Tribunal Act, 1949, *section* 3 (4), *proviso.*

Held: The premises were a freight-transport hereditament within the meaning of section 5 (1) (3) of the Rating and Valuation (Apportionment) Act, 1928, because:

(i) it was part of a dock undertaking, not the Manchester Ship Canal Company's dock undertaking (*Shell-Mex & B.P., Limited* v. *Clayton* applied), but the company's own undertaking as "comprising a part thereof a dock," which included a business enterprise having the practically effective use as a dock of the premises by the joint effect of a lease and a licence; and

(ii) "a substantial proportion of the volume of business [was] concerned with the shipping and unshipping of merchandise not belonging to [admittedly] or intended for the use of" the company, dealing with the goods *que* carrier to earn commission not being a use of the goods by the company within that clause (dictum of Viscount Simonds in *Shell-Mex & B.P. Limited* v. *Clayton* (1956), 49 R. & I.T. 545; 27 D.R.A. 278) applied).

Semble: the company was not a dock authority within the meaning of section 5 (1) of the 1928 Act, although having a sufficient holding to be "lessees of a dock" under that sub-section.

The Court of Appeal has jurisdiction under section 3 (4), proviso, of the Lands Tribunal Act, 1949, to decide a rating appeal on a case stated by the Lands Tribunal on points raised before the tribunal and referred to but not expressly determined in its decision where rejection of the submissions of one party thereon must be inferred from the question of law posed by the tribunal for the decision of the court: "Whether upon the facts disclosed herein I came to a correct decision in law in holding that the hereditament is not a freight-transport hereditament within the meaning of the Rating and Valuation (Apportionment) Act, 1928."

DWELLING-HOUSES UNDER THE 1953 ACT

"Suitability" of "Available Accommodation" for "Letting Rooms Singly"

Walls v. *Peak (Valuation Officer)*

(Court of Appeal, 24th, 25th March, 1960.) (53 R. & I.T., p. 230 (14th April, 1960).)

Special annual values—Dwelling-house—Letting of rooms singly for residential purposes—"Substantially the whole of the available accommodation"—"Accommodation . . . suitable for being used" for such lettings—Sitting-room and three bedrooms used by occupier—Seven rooms let singly—Not substantially the whole let—Valuation for Rating Act, 1953, *s.* 3 (2).

Premises comprised various rooms unsuitable for letting singly for residential purposes, including (admittedly) a dining-room with boiler in it, and in addition a sitting-room and three bedrooms used by the occupier and seven rooms all let singly for residential purposes.

Held: The premises were a dwelling-house within the meaning of section 3 of the Valuation for Rating Act, 1953, since "substantially the whole of the available accommodation" was not used for letting rooms singly, the sitting-room and three bedrooms being "suitable for being used" for such letting within the definition of "available accommodation" in section 3 (2).

Appeal against the decision of the Lands Tribunal (1959), (52 R. & I.T. 290) allowed.

RECENT LANDS TRIBUNAL DECISIONS

RATEABLE OCCUPATION

Houses let in parts: Valuation Officer's discretion under section 57

Gaskell and Others v. *Green (Valuation Officer).*

(Lands Tribunal, London, 17th December, 1959, 28th January, 1960.) (53 R. & I.T., p. 267 (28th April, 1960).)

Occupation—Separate occupation—Dwelling-house let in parts—Power of valuation officer to treat as one hereditament—Discretion exclusive to valuation officer—Circumstances to be taken into consideration—Several houses in estate—Estate policy to convert into self-contained flats—Local Government Act, 1948, *s.* 57.

Proposal — Grounds — Ratepayer's — Dwelling-house let in parts—Valuation officer's treatment as one hereditament—Ratepayer's proposal to assess separately—Only on ground that conditions of exercise not complied with—Local Government Act, 1948, *s.* 40 (1) (*b*).

Appeals—Powers—Ratepayer's proposal to divide assessment—No power to increase individual assessments proposed—Local Government Act, 1948, *ss.* 48 (4), 49 (1)—*Lands Tribunal Rules*, 1956, *r.* 45 (4).

Held: Each dwelling-house was properly assessed as a single hereditament, because:—

(i) (*a*) the local valuation court and the Lands Tribunal had no power to substitute their discretion for that of the valuation officer in deciding to treat a dwelling-house let in parts as a single hereditament under section 57 of the Local Government Act, 1948, and an objection to or appeal against such decision was limited to failure to comply with the conditions entitling the discretion to be exercised;

(*b*) although the valuation officer had not had regard to the estate policy, he had had regard to the possibility of voids, which constituted the only relevance of the estate policy to the exercise of his discretion and which as resulting from the policy were likely to be of small extent, and he had therefore taken that circumstance into account;

(ii) if the Lands Tribunal was entitled to substitute its discretion in the matter for that of the valuation officer, on the facts the dwelling-houses should clearly be assessed as single hereditaments under section 57.

Per the tribunal: It would not have been open to the tribunal to order the valuation list to be amended to show

values agreed between the ratepayers and the valuation officer to apply in the event of the parts being held to be separately rateable where those values exceeded those proposed by the ratepayers.

Description in Valuation List : Preston has no " maisonettes "

Griffel v. *Clarke* (*Valuation Officer*).

(Lands Tribunal, Preston, 2nd February, London, 22nd February, 1960.) (53 R. & I.T., p. 330 (26th May, 1960).)

Valuation list—Description of hereditament—Sufficiency—Local nomenclature — " Flat " or " maisonette " — Dwelling accommodation on two upper floors—Parts included clear.

The description " flat " is a proper description of dwelling accommodation on two upper floors in Preston where no use is made of the word " maisonette " sometimes used in other parts of the country to describe such premises. But the actual name is immaterial where it is clear what is included in the hereditament.

City Car Parks " Beneficially Occupied "

City of London Real Property Company, Limited v. *Stewart* (*Valuation Officer*).

(Lands Tribunal, London, 22nd January, 22nd February, 1960.) (53 R. & I.T., p. 329 (26th May, 1960).)

Occupation—(1) User—Office car park—Office tenants' use, notice board, control by landlords' employees—No parking spaces, charges or attendant—(2) Beneficial occupation—Test—Value to actual occupier or whether would command a rent—Office car park—No charges made—Capability of earning charges.

Evidence of value—Methods of valuation—Assessments—Office car park—No charges made—Assessments accepted by occupiers of comparable hereditaments.

A large modern office block in the City of London, which accommodated six firms as tenants, had a car park in the forecourt assessed at £55 rateable value. The car park had a turntable and held 12 cars of tenants of offices in the block, as indicated by a notice board there, and it was watched over by the housekeeper and lift attendant of the block who directed traffic in and out for one hour each morning and evening. No spaces were marked out or reserved, no charges were made and there was no full-time attendant. It was valued by the valuation officer on the basis of £5 per car, the figure accepted by occupiers of other car parks in the vicinity.

Held : The assessment must be confirmed because :—

(i) Having regard to the definite acts of user (parking, notice and control) the car park was in rateable occupation.

(ii) The occupation was beneficial, since the test was not whether it was of value to the actual occupier, but whether it would command a rent, as it would in the hands of a person making charges for allocated parking spaces.

(iii) There being no other evidence of value the valuation officer's basis was correct.

Council, not Tenants, in occupation of Estates Sewage Disposal Works

Re Appeals by Burnell (*Valuation Officer*).

(Lands Tribunal, London, 1st, 10th December, 1959.) (53 R. & I.T., p. 198 (31st March, 1960).)

Occupation—Separate occupation—Sewage disposal works of rural district council—Each works serving small council house estate—Separate hereditaments from houses.

Sewage disposal works of a rural district council each serving a particular council housing estate comprising respectively from 18 to 40 houses, and distant from 40 to 150 yards, are in the separate occupation of the council and not of the tenants of the houses served and comprise separately rateable hereditaments.

REBUS SIC STANTIBUS

Physical Characteristics of Retail Shop

J. B. Dickin and Company, Limited v. *Hallett* (*Valuation Officer*).

(Lands Tribunal, Bridgnorth, 20th November, 1959, London, 28th January, 1960.) (53 R. & I.T., p. 263 28th April, 1960).)

Annual value—Rebus sic stantibus—*User—Dwelling-houses adapted as shop—Use by draper, grocer and general merchant—Only 25 per cent. of turnover transacted over the counter—Centre for travelling salesmen—Valuation as warehouse or shop.*

Held : The assessment must be confirmed since the hereditament was correctly valued by the valuation officer as a shop, having the physical characteristics of a shop and being occupied for retail trade whatever business was done elsewhere by the travelling salesmen.

AGRICULTURAL DERATING

Exemption of Grain Drying Depot occupied by Farmers' Syndicate

Farmers' Machinery Syndicate (11th Hampshire) v. *Shaw* (*Valuation Officer*).

(Lands Tribunal, London, 14th December, 1959, 11th January, 1960.) (53 R. & I.T., p. 233 (14th April, 1960).)

Occupation—Occupation by servant or agent—Syndicate owning grain drying premises—Control by committee.

Exemptions — Agricultural building — " Occupied together with agricultural land "—" Used solely in connection with agricultural operations thereon "—Grain drying depot—Joint occupation by local farmers—Use solely for drying their farm grain—Rating and Valuation (Apportionment) Act, 1928, s. 2 (2).

Held : The depot was exempt from rates as an agricultural building within the meaning of section 2 (2) of the Rating and Valuation (Apportionment) Act, 1928, since :—

(i) it was occupied by the farmers jointly and severally (the syndicate not being a legal entity) and not by the committee, which was the agent of the syndicate ;

(ii) it was occupied in connection with the agricultural land comprised in their several farms and was used solely in connection with agricultural operations on that land ; there being no requirement that the building should be occupied with the agricultural land as one hereditament.

Hallmark Hatcheries v. *Spencer* and *Perrins* v. *Draper* distinguished.

EXEMPTION OF TRANSPORT HEREDITAMENTS

Toll Bridge not Exempt : not " incidental . . . to carriage by rail "

Harding (*Valuation Officer*) v. *British Transport Commission.*

(Lands Tribunal, London, 7th December, 1959, 11th January, 1960.) (53 R. & I.T., p. 232 (14th April, 1960).)

Exemptions—Railway or canal hereditament—Purposes of hereditament—Part of British Transport Commission's undertaking—Purposes incidental to parts used for carriage by rail—Toll bridge—Construction before railway—Use by railway traffic and extensively by other traffic—Local Government Act, 1948, s. 86 (2).

Held: The toll bridge was not exempt as a railway or canal hereditament within the meaning of section 86 of the Local Government Act, 1948, since, having regard to its existence before the railway, its certain continuance if the railway ceased and its use by non-railway traffic, its purpose was not incidental to the parts of the railway undertaking concerned with carriage by rail within the meaning of section 86 (2).

Status of Offices of British Transport Commission's Legal Department

Steedens (*Valuation Officer*) v. *British Transport Commission*; *British Transport Commission* v. *Steedens* (*Valuation Officer*).

(Lands Tribunal, London, 7th December, 1959, 11th January, 1960.) (53 R. & I.T., p. 262 (28th April, 1960).)

Exemptions—Railway or canal hereditament—Part of undertaking concerned with carriage by rail—Part subsidiary or incidental thereto—Offices of British Transport Commission's legal department—Work mainly concerned with railways—Local Government Act, 1948, *s.* 86 (1) (2).

Exemptions—Railway or canal hereditament—Part user for rateable purposes—Assessment direct to net annual value—Local Government Act, 1948, *s.* 87 (1) (*b*).

Annual value—Gross value—When required to be ascertained—Railway or canal hereditament—Use partly for rateable purposes—Local Government Act, 1948, *s.* 87 (1) (*b*).

Held: (1) The offices were a railway or canal hereditament within the meaning of section 86 (1) (2) of the Local Government Act, 1948, being occupied partly for non-rateable purposes and partly for rateable purposes within section 87 (1) and not wholly for rateable purposes, because a large part of the legal work carried out there was done in connection with the carriage of goods and passengers by rail or inland waterway and the hereditament was therefore a part of the commission's undertaking subsidiary or incidental to parts concerned with such carriage and was not part of the commission's central direction and control.

(2) The offices fell to be valued direct to net annual value as required by section 87 (1) (*b*) of the 1948 Act, and not to gross value.

RATING OF GAS BOARDS

Rateability of Research Station "occupied" by Gas Council

Solihull Borough Council v. *Gas Council, West Midlands Gas Board and Eldridge* (*Valuation Officer*); *Solihull Borough Council* v. *Gas Council and Eldridge* (*Valuation Officer*); *Same* v. *Same*.

(Lands Tribunal, London, 15th December, 1959, 28th January 1960.) (53 R. & I.T., p. 265 (28th April, 1960).)

Occupation—The occupier—Principal and agent—Gas Council and gas board—Gas research station—Operation by gas board on behalf of Gas Council—Gas Council in occupation.

Held: The research station was occupied by the Gas Council, since, on the true construction of the arrangements between the council and the gas board on which the question depended, as borne out by the references on the building, the notepaper and the licence application, it was occupied by the board only as the agent of the council, for which and under whose direction the research was carried on.

The research station was accordingly rateable and was not exempt by virtue of section 6 (2) of the Rating and Valuation (Miscellaneous Provisions) Act, 1955.

EXEMPTION OF PLACES OF RELIGIOUS WORSHIP

S.P.C.K.'s Chapel, Cinema and Offices all one; not exempt, but valued subject to restrictions

Morley (*Valuation Officer*) v. *Society for Promoting Christian Knowledge*.

(Lands Tribunal, London, 20th January, 22nd February, 1960.) (53 R. & I.T., p. 326 (26th May, 1960).)

Occupation—A single occupation—Church occupied by missionary society—Chapel used for society's and other public religious services—Other parts used as offices, etc.

Exemptions—(1) *Places of religious worship—Missionary society's premises—Chapel used for public religious worship—Remainder administrative and publishing offices—Remainder not a minor or ancillary use—*(2) *Church hall—Cinema in missionary society's premises—Adjunct of missionary activities, not chapel—Rating and Valuation* (*Miscellaneous Provisions*) *Act*, 1955, *s.* 7 (2).

*Annual value—*Rebus sic stantibus—*User—Restrictions—Restrictions and conditions imposed by scheme and deed—Scheme and deed sanctioned by Church Measures—Consecrated church—Use by missionary society.*

Held: (1) The church was a single hereditament, having been built as one building and being occupied and under the scheme and deed required to be occupied by one occupier, even though capable of separation by locking doors which was not generally done.

(2) Notwithstanding its continued consecration as a whole the whole hereditament was not exempt as a place of public religious worship under section 7 of the Rating and Valuation (Miscellaneous Provisions) Act, 1955, which did not cover premises a large part of which had no connection as such with a place of religious worship and so was neither incidental thereto nor a minor part.

Stradling v. *Higgins* applied.

(3) The hereditament must be valued as subject to the conditions and restrictions on user imposed by the scheme and deed.

(4) The cinema was an adjunct of the publishing activities rather than a church hall.

PLANT AND MACHINERY

Exemption of Plant and Machinery at Sewage Disposal Works

Jones (*Valuation Officer*) v. *Eastern Valleys* (*Monmouthshire*) *Joint Sewerage Board*.

(Lands Tribunal, London, 25th January, 22nd February, 1960.) (53 R. & I.T., p. 280 (5th May, 1960).)

Rateability—Plant and machinery—Plant "in the nature of a building or structure"—Tanks, settlement tanks—Chambers for conditioning or treatment—Chambers for drying—Pits, beds and bays—treatment—Pits, beds and bays-settlement—Plant constituting parts thereof—Sewage disposal works—Mechanical screens of screening chamber—Scrapers of settlement tanks—Media (*clinker*) *of sludge beds and bacteriological beds—Rotating sprinkler apparatus of bacteriological treatment beds—Plant and Machinery* (*Valuation for Rating*) *Order*, 1927, *schedule, class* 4.

Appeals—Determination—Powers of the Lands Tribunal—Reduction of assessment beyond that originally proposed—Agreement between ratepayer (*proposer*) *and valuation officer—Local Government Act*, 1948, *ss.* 48 (4), 49 (1).

The following items of plant and machinery of a sewage disposal works are not rateable as plant or machinery falling within class 4 of the schedule to the Plant and Machinery

(Valuation for Rating) Order, 1927, in each case, not being in the nature of a building or structure within the meaning of the order and also not falling within the specific category referred to :—

(1) Mechanical iron screens of the screening chamber, inserted across 4 feet wide channels, to remove rags, brushes and other large objects from sewage, the screens being kept clear by mechanically operated rakes depositing the material on a moving belt. The screens were grouted into the channel floor and the upper part was held by rag bolts, and the raking and moving belt mechanism was supported on concrete piers and prevented from moving by rag bolts.

Not being parts of a tank or chamber for conditioning or treatment having regard to their function of cleaning, the screens not playing any part in the treatment or conditioning of sewage.

(2) Scrapers of settlement tanks, rubber squeegees attached by bolts to a slowly revolving bridge (36 feet by 2 feet 6 inches wide), across half the diameter of the tank, the squeegees gradually sweeping the settled sludge on the sloping floors of the tanks to deep hoppers. The bridge was held down by its own weight.

Not being parts of tanks, *i.e.*, the settlement tanks, or chambers for conditioning or treatment, or pits, beds and bays—treatment ; or pits, beds and bays—settling, since they played no part in the treatment of the sewage for which the tank was designed.

(3) Media (clinker) of (sixteen) sludge beds (171 feet 6 inches by 35 feet (eight) and others by 70 feet —16,000 square yards total area) 5,330 cubic feet weighing 4,000 tons, laid 9 inches by 3 inches deep on the sludge beds (on which were land drains), the sludge being dried there before manual removal.

Not being parts of chambers for drying, or pits, beds and bays—treatment, and not itself a pit, bed or bay—treatment, material poured in and raked flat being comparable rather to a liquid poured into a tank than to a building or structure.

(4) Media (clinker) of (twelve) bacteriological beds (94 feet diameter) used for purification of effluent. The clinker was supported on concrete floors (on which were land drains), its depth averaging 5 feet 6 inches, making 1,447 cubic yards ot 1,100 tons per bed. It was graded to give an open texture or honeycomb effect creating a rough surface on which organisms could attach themselves which checked the growth of a gelatinous film of bacteria, etc., playing an important part in the purification of the effluent for which the beds were used.

Not being parts of chambers for conditioning or treatment, or of pits, beds or bays—treatment ; or itself a pit, bed or bay—treatment, material which is merely tipped and raked level not being in the nature of a building or structure.

(5) Rotating sprinkler apparatus of the bacteriological treatment beds (6-inch diameter steel tubes radiating from the centre of each bed), from which jets distributed the liquor evenly over the bed as it turned.

Not being parts of chambers for conditioning or treatment or of pits, beds or bays, not being of any substantial size as to be in the nature of a building or structure.

In determining an appeal against a decision of a local valuation court, the Lands Tribunal has no power to fix an assessment at a figure less than that proposed by the ratepayer in his proposal by virtue of section 48 (4) and 49 (1) of the Local Government Act, 1948, even where a lower figure has been agreed with the valuation officer.

Vats in Vinegar Factory : Basis of " Effective Capital Value "

Thomas (Valuation Officer) v. *Manor Vinegar Company, Limited.*

(Lands Tribunal, London, 5th January, 8th February, 1960.) (53 R. & I.T., p. 269 (28th April, 1960).)

Rateability—Plant and machinery—" In the nature of a building or structure "—Vats for brewing vinegar—Plant and Machinery (Valuation for Rating) Order, 1927, schedule, class 4.*

Evidence of value—Contractor's test—Effective capital value—Meaning.

Held : The vats were rateable plant and machinery as " vats " which were in the nature of a building or structure within the meaning of class 4 of the Plant and Machinery (Valuation for Rating) Order, 1927, being constructed on the site by fitting together, even the smallest being of substantial size and all being permanent since they were intended to remain *in situ* while functioning, and being removable only when taken to pieces.

Tests laid down by Jenkins, J., in *Cardiff Rating Authority* v. *Guest, Keen, Baldwins Iron & Steel Company, Limited* (1949) 42 R. & I.T. 5 ; 19 D.R.A. 122 applied.

The effective capital value of plant in a valuation on the contractor's test is not its price new or its value second-hand but the amount which would be paid for it if the factory were acquired as a going concern.

[**Note :* The 1927 Order has since been replaced by the Plant and Machinery (Rating) Order, 1960 (S.I. No. 122, 1960). The wording of the description of class 4 of the schedule has been amended, but " vats " remain rateable under the new Order. See " Rating Surveyor's Diary " in *The Chartered Surveyor* for March, 1960, at page 487.]

THE PROFITS BASIS

Effect of Future Prospects on Hypothetical Rent

British Transport Commission v. *Hingley and Robinson (Valuation Officers) and Grimsby Rural District Council.*

(Lands Tribunal, London, 15th, 16th, 17th January, 7th March, 1960.) (53 R. & I.T., p. 249 (21st April, 1960).)

Evidence of value—Profits—Adjustment—Receipts—Dock undertaking—Steady traffic increase in most principal commodities—Heavy fall in coal in accounts year—Due to temporary Ministerial direction—Dock railway receipts—Apportioned part of through charge with main railway—Prospect of upward revision.

Held : The assessment must be reduced to £32,000 net annual value because :—

(i) although it was permissible to look at evidence of trade and dock railway expenses subsequent to the date of valuation in order to show whether an estimate or anticipation was reasonable,

(ii) figures for gross receipts or working expenses derived from the accounts should only be altered when a charge, *e.g.*, in rate of charge or scale of wages, was known at the relevant date with such certainty as to enable its effect to be quantified accurately,

(iii) the receipts from the dock railways being an apportionment of charge which was not unfair or unreasonable, any tenant, even knowing the scale of dock railway charges was under review, would look at the past and accept the prospect of a loss rather than increase his rent on the possibility of an increase, and

(iv) the tenant would regard the increase in general traffic as a cushion against ordinary trade fluctuations but would treat the coal traffic drop in 1955 as abnormal with the expectation of a return to former levels and would increase his offer from £26,000 based on the 1955 accounts to £32,000.

Tenancy—but no Rent
Absence of " Special Circumstances "

British Transport Commission v. *Hingley* (*Valuation Officer*) *and Grimsby County Borough Council.*

(Lands Tribunal, London, 13th, 14th, 15th January, 7th March, 1960.) (53 R. & I.T., p. 247 (21st April, 1960).)

Evidence of value—Methods of valuation—Profits producing nil value—Special circumstances justifying other method—Dock undertaking—Part of British Transport Commission's undertaking—Arbitrary boundaries, interdepartmental accounts, benefit to railways, loss met from other sources—Finding that no rent would be paid.

Held : The docks must be valued on the profits basis at nil net annual value, because :—

(i) their arbitrary boundaries, their largely interdepartmental accounts, their benefit to the railways and the meeting of the loss from other sources were not special circumstances invalidating the use of the basis ;

(ii) the commission or other person, knowing of the loss and of the nil valuation it produced, of the rents from let out properties depending on the docks and of the size and importance of the docks, would take a tenancy, but in view of the operating loss at no rent, and the landlord would accept this to keep the docks working.

Public-house and Caravan Site valued as one

Hodgkinson v. *Hallett* (*Valuation Officer*).

(Lands Tribunal, London, 10th December, 1959, 28th January, 1960.) (53 R. & I.T., p. 245 (21st April, 1960).)

Evidence of value—Methods of valuation—Two classes of property—Single or separate valuations—Public house and caravan site—Old house badly planned—Single valuation on profits—Percentage on licensed turnover plus profits of caravan site.

Held : The assessment should be reduced to £100 gross value, £80 rateable value, since a single valuation of the whole on the profits basis based on the actual accounts was the correct method of valuation, there being no suggestion of mismanagement or of the accounts not reflecting the possibilities of the premises, and the valuer for the valuation officer having himself previously accepted that method.

Ind Coope and Allsopp v. *Meddick* distinguished.

Local Employment Act, 1960

REHABILITATION OF DERELICT, NEGLECTED OR UNSIGHTLY LAND

Section 5 (3) of the Local Employment Act, 1960, enables the Minister of Housing and Local Government to make grants to local authorities for the rehabilitation of land in development districts which is derelict, neglected or unsightly. Grants may be paid towards the cost of acquiring such land, and towards the cost of works which enable the land to be brought into use or which improve the amenities of the neighbourhood.

Before payment of grant can be made, local authorities must be able to demonstrate that the land is otherwise likely to remain derelict, neglected or unsightly for a considerable period, and that works of reclamation or improvement are expedient for the purpose of providing employment appropriate to the needs of the district. In circular No. 30/60* it is explained that the relevant consideration is not the temporary employment created by the proposed work, but the likelihood of a scheme enhancing the prospects of additional employment in the area by rendering it more attractive to industry. (*H.M.S.O., 3*d.* net.)

It will normally be a condition of grant that if the land does not already belong to the local authority it must be acquired by the authority before work starts. Where the work is within the scope of section 89 (2) of the National Parks and Access to the Countryside Act, 1949, however, it is possible under section 89 (3) for the work to be done on land not belonging to local authorities by arrangement with the persons interested in the land ; and such a scheme may be considered for grant.

The Minister hopes that local authorities in development districts will take advantage of these powers, both for acquiring land in appropriate cases and for carrying out any schemes which can be done at a reasonable cost and which will make land fit for redevelopment or provide material improvement in amenities.

Under section 7 of the Local Employment Act, 1960, the Minister is enabled to give grants towards water and sewerage schemes and sewage disposal facilities where existing service in a development district are inadequate and it is expedient for the purpose of providing employment appropriate to the needs of a district that they should be improved.

CONTROL OF INDUSTRIAL DEVELOPMENT

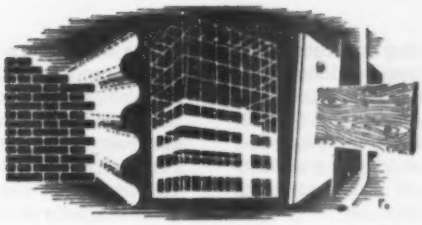
The Local Employment Act, 1960, came into operation on 1st April. In the debate on the Bill, it was made clear that the Board of Trade will not regard the provisions of the Act, in particular section 17, as requiring any change in their attitude to applications for industrial development certificates in areas receiving overspill under the Town Development Act, 1952. Areas of high unemployment (now to be known as development districts) will continue to have first priority in the steering of industry, but consistently with their overall responsibility, the Board of Trade will continue to do all they can to steer industry to approved overspill areas.

Section 1 (4) (*a*) of the Act refers to the special case of an area of high unemployment which is itself an " exporting " area under the Town Development Act. Here the " receiving " area will be treated as one with the exporting area for the purposes of the Local Employment Act.

Parts II and III of the Act amend section 14 (4) of the Town and Country Planning Act, 1947, which requires an industrial development certificate to be obtained before an application can be made for planning permission.

One important requirement of the new Act is that certain planning applications relating to changes of use, as well as to buildings, will need to be accompanied by industrial development certificates. The Act also makes a change affecting planning applications under section 18 (1) of the Town and Country Planning Act, 1947. No industrial development certificates will be needed in these cases but authorities are asked to consult the Board of Trade about them.

Notes on the provision of the Act concerning industrial development certificates are contained in Ministry of Housing and Local Government Circular No. 32/60 (H.M.S.O., 4*d.* net).



BUILDING AND QUANTITY SURVEYING

Techniques in Quantity Surveyors' Offices

A discussion on "Techniques in Quantity Surveyors' Offices" was opened by Mr. A. T. Brett-Jones (Professional Associate), Mr. C. R. King (Fellow), and Mr. R. W. Coatman (Professional Associate), at a general meeting of quantity surveyors held at the Institution in April, 1960; their remarks are published below.

1. By A. T. Brett-Jones (Professional Associate)

I propose starting with my feet very much on the ground, because the equipment which I shall speak about involves ordinary calculating machines, copying machines and dictating equipment, which are well within the reach of most surveyors' offices. I shall not speak about some of the more exotic electronic equipment which may produce a saving in the case of those offices unlucky enough to be spending £25,000 a year on their working-up.

I shall deal first of all with calculating machines. We are all familiar with the traditional Sumlock and comptometer which has served us well for the past 30 years. I believe that the essential characteristic of those machines is that they are basically adding machines and that the addition has to be done by a skilled operator depressing the keys. This process, of course, equally applies when multiplication is required; thus if you want to multiply four by five you do it by pressing the "4" key five times or the "5" key four times. To work up any speed, therefore, it is necessary to have a skilled operator as a great deal of manual dexterity is required to get the answer quickly.

The essential feature of most of the latest automatic calculators is that the multiplication is done automatically. If you multiply four by five, with the latest machine it is only necessary to press the "4" key once and the "5" key once and then press the multiplication key. You then get the answer. It does not require much manual dexterity to operate, and therefore has the very great advantage that an unskilled operator can use it. That clearly produces a substantial saving in a small office or even a medium-sized office which cannot afford to have two full-time skilled operators.

The second advantage, in the case of some of them, is that they will accumulate. In other words, if you have a column of dimensions, you can go through the squarings and obtain a total without putting the answers to the squarings into the machine again. I realise, of course, that this can also be done on a comptometer, but it can only be done for simple sums and extensions. You cannot do it with cubes, and as far as the machine is concerned, a super. dimension which is multiplied is a cube.

These machines vary a great deal. If you go to the Business Efficiency Exhibition, you will see various calculating machines which vary in price from £15 to £400 or more. In my opinion, a great many are quite unsuitable for quantity surveyors' offices. I do not think that the cheaper ones are suitable for squaring dimensions and that sort of work. I think you will have to pay around £250 or more for one of the better automatic types.

I should like now to run quickly through the things to look for in buying one of these machines.

First of all, test the number of operations required in order to do a cube. When the manufacturer's representative comes round to your office, he is usually accompanied by a man who knows the machine backwards, and he deftly works the machine and produces the answer to a cube very quickly. But you want to do it yourself, and if you do a cube, say, 4 foot by 5 foot by 6 foot and find that, having multiplied 4 foot by 5 foot it is necessary to transfer that answer somewhere else before multiplying it by 6 foot, then I think you can say that the operation is too complicated. It should be no more complicated than pressing:—
"4"—"×"—"5"—"×"—"6"—"=" (6 keys in all).

Another point to look for is the number of digits. This is important because many of the machines have an insufficient number of digits for a quantity surveyor. However, if you insist on putting in all dimensions to three places of decimals, you will find that on some machines you have an answer to nine places of decimals for cubes. That means if the final answer is in tens of thousands, you want 14 digits on the machine in order to obtain it. In my opinion it is unnecessary to take these figures beyond two places. If you have 4 feet 2 inches you put in 4·17 instead of 4·167. When one considers that all dimensions taken off are only accurate to the nearest inch and may be as much as ½-inch out, it seems rather ridiculous to quibble about ·003 feet (·036 inches). If you decide to take work to two places of decimals, it is quicker and less likely to lead to error, and in that case a machine with 13 digits will cover any calculation you require.

The third point is whether the machine has one or two registers. The great advantage of a machine with two registers is that you can accumulate with it. The process is quite simple. While one register is squaring or multiplying

dimensions, the other register will be adding or accumulating the result. There is obviously great advantage in speed in accumulating, because it is necessary only to put down the answer in relation to all the dimensions instead of each individual answer. Also I think there is far less likelihood of error, because errors occur in transferring the answers from the machine to the dimensions and then putting the answers back into the machine again for the cast.

I tested this by taking a column of 20 dimensions and squaring them in the traditional way. I put in 188 digits and read off, and wrote down 81 digits. Doing it by the accumulating method, I put in only 112 digits instead of 188, and wrote down 5 digits, instead of 81. I submit that it is in the very process of reading off from the machine and writing down that the mistakes are made and speed is lost.

The fourth point to decide is whether to have a printing calculator or not. A printing calculator is one which has a roll on the end and prints the answer. It is a matter of considerable controversy. I think that the advantage is great if you are accumulating, because you can quickly see where any error is by reference to the printed roll. On the other hand, the actual speed with which the machine works will be slower with the printing calculator. One small point to watch if you do buy a printing calculator is that the digits put into the machine should be printed in black and the answers in red. If you get a machine which does it all in black it is a great disadvantage as you cannot pick out so easily the figures that have been put in. We have been using one of these printing calculators recently, and we have evolved a new system of checking dimensions. We put the digits into the machine, and check as we go along from the printed figures on the roll. Then, a second person checks over to see that the correct figures have been put in by inspecting the printed roll and comparing with the original. We have a third check with someone looking for decimal points and plus and minus signs which is an additional safeguard where a big error might occur. That method has proved as quick if not quicker than squaring and checking on the traditional machines. We employ it in a branch office of about 20. The machine is an Olivetti Tetractys. We feel that we have a double or even a treble check where it is most needed.

The fifth point to bear in mind when buying a calculating machine is to try it out in the office for some considerable time beforehand. These machines are after all quite expensive pieces of equipment. We had this particular machine for three months in our office before deciding to buy it. These are new machines and manufacturers are selling them to quantity surveyors for the first time. At present, most manufacturers will let you have a machine on approval for a month or two, and I think you would be wise to have a machine for that time before deciding to buy. If you feel you might be under some obligation after that length of time, you can always hire it instead, and generally there is some arrangement whereby if you eventually decide to purchase the machine, the cost of hiring is deducted from the price.

Before finishing with calculating machines, there are two further points I should like to mention. From the tax angle there are four ways of buying equipment. You can either buy the machine outright and treat any replacement as an expense known as the " Renewals " basis ; you can buy it and claim the initial allowance and annual depreciation ; or you can buy it on hire-purchase, which is what most of the large commercial firms do ; or you can hire it, in which case the cost of hire will count as an expense.

The other point is that one of the great disadvantages, I think, of any calculating machine is our appalling system of yards, feet and inches. Every dimension put in has to be changed into decimals and changed back again. When the Institution was asked by the British Association for the Advancement of Science for its views on whether this country should change to the metric system, it came out wholeheartedly in favour of the metric system. I think that our job would be much simpler if we changed, but no change is possible until the builders and architects decide to change as well.

Coming now to copying machines and dictating equipment, most surveyors have some kind of calculating machine in their offices, and we know the use they are put to ; but it is not so obvious how copying and dictating machines can particularly help the quantity surveyor.

First, with regard to copying machines, I think that copies of draft schedules of windows, doors and finishings are very useful. If you have two or three takers-off working on a job, I think it is helpful that they should all have copies of those schedules, and that is where the copying machine is extremely useful, because it can produce the copies quickly and there is no reading over. You know that the copy you obtain is correct. Again, there is a great saving in my view if all the takers-off on a job have a copy of the specification. Some of you may have had admirable though lengthy specifications from the Ministry of Works and shorter ones from private architects. In any event there are seldom enough copies for all the takers off working on a job and in my opinion as with schedules it saves a taker-off time if he has a copy of all the information he wants in front of him.

Taking a copy of preambles and preliminaries from previous jobs is perhaps an obvious use to which the copying machine can be put. Sometimes we find that separate bills are required for similar jobs, and it is a great saving in time to take a copy of the first bill and alter it for subsequent bills. The same applies to dimensions. Other uses are copies of query lists and taking-off lists, and generally I think that copying machines are particularly useful for taking copies of draft documents for internal use in the office.

The type of machine required will depend on the size of the office. A large office might wish to buy more than one type. A small office, however, will feel that one is sufficient. It must be large enough to copy any document up to double-foolscap size. It must copy anything in ink, pencil or colour as well as type. It should copy from bound bills of quantities and specifications, and it is important that one should be able to write on the resulting copy paper. Other points are speed of reproduction and cost of using the equipment in the office in terms of cost of paper.

Copying machines fall into two classes. There is one which works on a dry " heat " process using special paper ; that is called the " Thermo-Fax " ; the other types work on a photographic process. The " Thermo-Fax " is quicker than the photographic type and cheaper to use. The disadvantage is that you cannot copy certain inks. On the other hand, it will copy metallic-based inks and ordinary ballpoint pen and pencil, and if you can control what you want to copy, then the disadvantage fades to a certain extent although not entirely, because some of the documents required to be copied will come from outside where one has no control.

The photographic types come up to all the requirements I have mentioned. The box type is one with which one can copy bound bills and double foolscap size. There is not a great deal to choose between the various makes because they are all based on a foreign patent. They take about

50 seconds to produce a copy as against 4 seconds in the case of the "Thermo-Fax" type, and one foolscap sheet costs about 8*d.* as against perhaps half that with Thermo-Fax. That means if the photographic type is being used extensively in an office £5 to £15 a week can be spent on paper, whereas the cost of using the dry copying method would probably be half that. On the other hand, the cost is much less than typing. However, I think that the main advantage is in the saving of surveyors' time, and the time of the takers-off and workers-up. It is here that the smallest office can increase its efficiency by using a copying machine.

Turning to dictating equipment, no chartered quantity surveyor should ever be seen again on a site writing down measurements while, at the same time, trying to manipulate a 5-foot rod and holding up a plan, apart from finding somewhere to put his brief case and bowler hat! All he has to do now is to take out a portable tape recorder and talk. He can put the microphone in the lapel of his coat thus leaving both hands free to wield his 5-foot rod and to study the plan. That in a nutshell is the use of portable tape recorders. The advantages are enormous. Not only does the use of a tape recorder halve the surveyor's time on the site, but back in the office he has only to have the tapes transcribed, leaving a certain amount of editing to be done dependent on the ability of the surveyor in dictation—an art which is pretty easily acquired by practice.

There are various types of machines which can be used in the office in a variety of ways. Draft bills can be dictated easily from abstracts, and it is particularly useful if you want a second copy of the same bill to dictate the first and have the typist make two copies. I think that specifications can always be dictated more economically than writing them. A further point is that surveyors work hard, and they can usually be seen after 5.30 p.m. whereas secretaries are rare after that hour. That is where the dictating machines come into their own. Even during office hours however it is more economical to dictate into a machine rather than have shorthand-typists take it down, although it is not always easy to persuade senior partners of this.

In portable machines there is the Grundig "Memorette," the E.M.I. "Minifon" and the Dictaphone "Dictet." You carry them over your shoulder, and the microphone is clipped to the lapel of one's coat. For office machines—the Remington Ultravox, using flat sheet instead of tape, is very useful in that you can play back any part of it very quickly. On the other hand, Remington do not make a portable machine to go with their table model. Grundig, E.M.I., and Dictaphone all make table models where the tapes are interchangeable with their portable types.

It is absolutely essential to be the complete master of the dictating machine. In my view, it is ridiculous not to know which knob to press automatically. You have to learn how to use these machines as you learn how to use a theodolite and other surveying equipment. I advise therefore that before going out to dictate "spot" items for the first time one spends a morning in the office "cutting openings in walls" and "redecorating it" so that one becomes good enough to concentrate completely on the work in hand and let the dictating equipment be the "aid to surveying" it should be.

In my view the small and medium-sized office has a great deal to gain from the use of some of the latest mechanical aids to surveying which I have described. They may not be able to make 100 per cent. use of any particular machine which the larger office can, but the gain to them is in added flexibility. The greatest difficulty in a small office is coping with a rush of work and that is where the machines help.

Finally a lot of the material for this short paper was originally gathered together by my partner, Brian Henderson, for use in our office, and it is to him therefore that I owe my thanks this evening.

2. By C. R. King (Fellow)

I should first like to say a few words on the possible dangers of mechanisation. I am completely in favour of all machines that we can use intelligently, but we want to look at the possible dangers. As far as I am concerned, it is rather like the cyclist buying his first motor-car. He has to learn to use the machine. He has to know exactly where he is going, and he has also to know the real dangers that lie ahead resulting from the careless use of the machine.

Mr. Brett-Jones has so amply dealt with the obvious dangers of mechanisation that I need only say one or two words in that connection. Quite a number of people think that the right answer will be obtained even if the operator hits the wrong key! Therefore, anything done by the machine has to be carefully checked.

A less obvious danger of mechanisation—not necessarily of the machines we have been talking about—is the lack of thorough training which our juniors may suffer if we go too quickly into mechanisation. This is very important from the standpoint of the future of our profession. With the old techniques, the junior by doing the squaring learns all about cubes, supers., runs and so on, and by abstracting learns the elements of taking-off, and in billing he learns the use of decent descriptions. By doing all those jobs, he learns to assume responsibility and gradually becomes a sound and reliable assistant. Then, when he comes to do his taking-off, his principal knows that he will do it well because he has been a well-trained assistant. I am a little worried that over-mechanisation can do harm unless we are very strong-willed in ensuring that our juniors do get a thorough basic training in the essential elements of quantity surveying.

Format of Bills of Quantities

You may remember that in the August, 1959, issue of *The Chartered Surveyor* there were reproduced under this heading some observations by the Quantity Surveyors Committee, and some very good advice was given in that article, the main point being, of course, the use of right-hand billing. We may not all agree with all the detailed recommendations made. I know I do not. I personally do not like the idea of hundredweights being put in fractions, and I do not like the idea of squares being put in fractions. It can easily be avoided by putting hundredweights in the quantity column, and quarters and pounds in the unit column. That, however, is a small point.

The increased use of machines very much steps up the argument in favour of right-hand billing, because with a machine, it is obvious if you have your quantities on the right-hand side of the paper, followed by price and then cash columns, it is a simple operation to do all the calculations, and it is quite amazing how quickly a trained operator will check a builder's priced bill. I get the average 100-page priced bill back in just over an hour, completely checked and with the mistakes listed in it. That job can take two days if done manually. Contractors naturally prefer right-hand billing, and I do strongly urge all quantity surveyors who have not yet changed to it to do so. It will be to their advantage.

Eliminating Manuscript draft Bills

You will probably all agree that the most laborious and non-productive task in producing a bill of quantities is the actual writing of the draft bill. This can be completely and satisfactorily eliminated providing you have two things—good takers-off and good abstractors. The takers-off must do their job properly. In putting down dimensions, it is also necessary to put down full and correct descriptions of what is being measured, and to put in the full trade preambles which are necessary. It would appear that the average taker-off seems to think that he has no responsibility to do just that, and he thinks that by some miracle the man who edits the bill will know exactly which preambles to put in at the last minute. If you have good taking-off, you can have a good abstract, with clear descriptions and preambles on the abstract. You then edit the abstract as though you are editing the draft bill. In addition, you number it through in pencil in the order in which you want it produced, so you have a numbered, edited abstract. That edited and numbered abstract is handed straight to a competent typist. That has to be checked, but it is much quicker to check a typed bill. There is the advantage that one can read it, and one can much more easily pick up a mistake in a typed draft bill than in a manuscript bill. The worse the writing, the more likely it is that mistakes will be overlooked. This method of completely eliminating the written draft bill can be applied to any size of job, provided you have a reliable taker-off and a reliable worker-up. On a job up to about £500,000, it is possible to save a fortnight in time. It might sound an exaggeration, but that is my experience. Of course, on the smaller job or rushed job if you put stencils into the typewriter instead of paper, and you have a really competent typist, you can go straight from the abstract to printed bill. It means on a small job that one can have printed bills turned out in two or three days from the time the abstract is completed, and this saving of time is a great advantage.

Eliminating abstracting and billing in final accounts

This is simply achieved by using what we call " builders' estimate paper," with columns on the left-hand side for taking off and squaring, description in the middle, and columns on the right-hand side for reduced quantity, price, rate and the extension. The result is that everything is on one piece of paper. It means that items are not in trade order, but I think that in most final accounts that does not matter. There is a great saving in time, and it also eliminates the chaos which occurs in most busy quantity surveyors' offices when they have a large number of final accounts going through. If the final account can be done on the builders' estimate paper, the whole job can be kept together with a saving of time and the elimination of confusion.

Negotiating and agreeing variations by the quantity surveyor before work is carried out

Most of you will have had some experience of this work. It depends on the client in this case. On the rare occasions when the client allows the architect to plan the job, and on the even rarer occasions when variations are properly considered before they are put into action, then the architect can come to the quantity surveyor and say " My client is considering changing this to that ; how much will it cost? " If the quantity surveyor can sit down and measure off those quantities, price them out and report the price, the client will say yes or no, and they can then go straight into the final account. With extra effort one can get a contractor to agree variations as they are measured, and you have a whole list of accepted estimates which saves most of the troubles which arise on the final account. This method can be a nuisance when your architect client rings you up just when you are very busy and asks you to do these variations. On the other hand, you have to weigh it against the fact that it is much better in the end.

Envelopes

There are all sorts of small ways in which one can save time and improve the office, and I will only mention two. I find that a number of firms—even some quantity surveying firms—go to the trouble of having their own names printed on the back of their envelopes. I suppose that might be considered as some form of publicity, but it is much more efficient to have the name of your regular clients printed on the front of the envelopes, which saves the typist a great deal of time. It can also avoid that ghastly business when you are rushed and the typist puts Birmingham instead of Bournemouth, and you cannot understand why the letter did not reach its destination.

Correspondence

There is another point with reference to correspondence. I do not know whether many of you use the N.C.R. correspondence paper, which stands for " no carbon required." It is sensitized on the back, and you put your copy paper behind the sensitized correspondence paper, and the copy comes out as good as a carbon copy. It costs more but it saves a great deal of time.

Conclusion

In conclusion, I would say that the old techniques, having stood the test of almost 200 years, are fairly sound and should not be discarded without real consideration. But we must all be progressive, and there is plenty of scope for quicker methods, and also for taking short cuts, provided that on each particular job and on each particular method we carefully consider them for their true merits.

3. By R. W. Coatman (Professional Associate)

Our profession to-day comprises mainly private firms of quantity surveyors and quantity surveying sections of various Government departments or large public undertakings. Of the private firms, many are large or even very large. Also many of the Government and public undertakings rank as large firms. Consequently, I feel that the majority of quantity surveyors can be considered as being members of large offices, and this is, I think, borne out by the various meetings arranged by the Quantity Surveyors Committee and the Junior Organisation Quantity Surveyors Committee. It therefore follows that of those present here this evening, a minority are from small offices. In order to make this minority feel completely at home and at ease, and also to strike a balance and to ensure that tonight's discussion covers as much ground as is reasonably possible, I have decided that my contribution should be entitled " The Small Office " or " All my own Work." As I am a partner in a small office, you will appreciate that I am speaking from experience.

With reference to mechanical equipment, I for one would welcome any form of automation, especially if it will lighten our burden and save time.

However, listening to Mr. Brett-Jones and Mr. King, I wonder whether machines will ever apply to the small office, at least on a scale of any size, because of two principal reasons (*a*) initial cost and (*b*) economics.

Obviously finance or, rather, the lack of it, is a constant headache to the small office, and in any case, capital is short. As to economics, unless a machine is working most of the time, it is normally not an economical proposition, particularly if a skilled operator is also required. To make it economical, a constant supply of work is demanded ; this, of course, is not available in a small office.

The small office must, therefore, look in other directions to find suitable techniques, and the following are brief details of some of those adopted in my office.

Before any taking-off is started, considerable attention is paid to the format of the bill of quantities. A very comprehensive taking-off list is prepared, which eventually forms the index to the dimensions and is also used during the working-up process. Also we bravely try to settle all queries and obtain a list of P.C. and provisional sums.

The taking-off proper is carried out very carefully and intelligently, principally because as much as possible will be billed direct and also because the taker-off himself will be the biller.

Descriptions at this stage can be very brief. In fact, they need only be sufficient for the taker-off to recognise when he bills. In this connection I find it extremely helpful, when adding or deducting in the dimensions to items measured earlier, that the page reference should be inserted. This takes only a moment at the time of taking-off but saves hours when billing direct.

Considerable time can also be saved by the extensive use of schedules for taking-off. Foundations, drains, plumbing, etc., particularly lend themselves to this treatment. This not only makes billing easier, but saves all the abstracting process. It will also be fully realised that any saving on abstracting is a saving on checking.

As regards working-up, all squaring, abstracting and billing, also the relevant checking, is carried out by takers-off. As they have considerable experience in these matters and know exactly the format of the finished bill of quantities, this process is very quick and accurate. It is also economical. I believe it is cheaper than employing a worker-up. It is quicker and more accurate, and no editing of the finished bill, which often takes a very long time, and can lead to errors, is required. Also no time is wasted at any stage answering queries, etc., with the worker-up.

Much of the billing, as I have already mentioned, is done from schedules or by billing direct. At this stage, I can safely say that there is one piece of mechanical equipment we do employ and find most useful, and that is a typewriter! This is not only used for correspondence, but really earns its keep during the billing process. Large portions of the bill are dictated to a shorthand typist for typing. This avoids manuscript billing, which is both lengthy and boring, and also provides work for a shorthand-typist who would otherwise not be fully occupied in a small office. We try to avoid any abstracting manuscript billing. A great deal of work is taken straight from schedules and dictated to a shorthand-typist.

With regard to the running of the office generally and to facilitate smooth running at all stages, we have devoted considerable thought and money to developing a central filing system, fully indexed and cross-referenced, for all to use. I consider that if all offices gave more thought to this subject, much time would be saved, and the number of documents requiring copies for general circulation throughout the office could be reduced. In nearly all the offices in which I have worked, the lack of an efficient filing system was most obvious.

While on this subject I have just heard that there is a machine now on the market known as the automatic telephone. Apparently, this is an attachment, approved by the G.P.O., that can be fitted to the office telephone at any time the office is going to be left unmanned. I think that this piece of machinery would interest the small office very much indeed, and if any member here this evening knows of this fitting, I for one would be most interested to have more details.

In conclusion, I should like to make a brief reference to the training of the future generation which, I think, is very important. If we are to have push buttons and machines, we shall not get the future generation properly trained. I should like to put in a plea for the small office. I think that generally the small office is a happy office, the standard of workmanship is very high, and the work itself is very varied and rewarding, mainly because there is no division of labour. I therefore consider that the facilities for training the future generation are probably second to none in a small office.

Practical Points—The Quantity Surveyor

By K. K. DALE (Fellow)

The response to the concluding sentence in my last article has been such that I now have some two dozen queries to answer. The questions have come from qualified members, probationers and students, which is as it should be, and range from the relatively straightforward to the complex and even contentious.

One of the less difficult questions concerns the deduction of a sum of money from the total of a bill of quantities in order to arrive at a tender figure. In the example quoted the figures are :—

General builder's work and profit on P.C. sums	£50,000
P.C. and provisional sums	50,000
	£100,000
Less 1 per cent.	1,000
Tender	£99,000

The question asked is : should the final account be adjusted in the same way as above, or should the £1,000 be calculated as a percentage of the cost of builder's work and applied to builder's work only? As the builder cannot vary P.C. items, any reduction he makes must be from his own work. My own preference in these cases is to deduct P.C. items and profit (but not attendance) thereon, before calculating the percentage reduction on measured rates. This method simplifies the adjustment of P.C. items in that no complication of adding and omitting say 2½ per cent. profit less say 2 per cent. of the 2½ per cent. arises, and the difference is normally so small as to be negligible.

A letter from a member overseas raises a series of hypothetical questions concerning the adjustment of variations with particular reference to the penultimate paragraph of clause 1 and clause 9 (*a*) of the R.I.B.A. Standard Form of Contract. Before considering the questions, it may not be out of place to point out that, under clause 1, it is the duty of the architect to ascertain the " loss or expense " and not,

as under clause 9, a matter for the surveyor. The questions are based on the assumption that a tender on low rates and amounting to £40,000 is accepted. Variation orders result in a final account of £60,000. Under these circumstances, would the contractor have a justifiable claim relating to the £20,000 excess under clause 1 if this excess were due to (*a*) an increase in the scope of the work by, say, the addition of another wing to the building, or (*b*) a higher standard of finish and not increased scope? Arguing from the hypothesis that costs generally tend to decrease as production increases, my answer to (*a*) would be "no." Case (*b*) is slightly different but would probably be solved under clause 9.

This same letter goes on to ask whether a similar claim should be entertained if the accepted tender were a high one and the value of the work were eventually reduced. Here, in my view, such a claim would be unlikely to succeed unless the contractor could prove that his margin of profit on the work done had been reduced to an obviously uneconomic level.

For full measure and as a rider to the previous question, the member asks if a contractor is entitled to recover profit on P.C. sums for items which are either (*a*) omitted from the works or (*b*) purchased direct by the employer. The answer to (*a*) is a simple negative and my normal way of dealing with (*b*) is to allow contractor's profit, provided the subject of the P.C. sum is incorporated in the work during the currency of the contract.

From another source comes the question "Is the quantity surveyor morally bound to advise the contractor to confirm variations in writing where the architect is dilatory in issuing instructions?" Firmly resisting the temptation to reply "it all depends on the quantity surveyor's morals," and refraining from comment on dilatoriness, this is not as easy to answer as a first reading of the question suggests. Having prepared the quantities, the surveyor's duties under the contract appear to be limited to the production of the "priced bills of variations." Other services are envisaged by the scale of fees, but not referred to in the contract. The contract is specific on variations and their authorisation and, as I see it, the surveyor could refuse to recognise any variation not duly authorised. By signing the contract, the builder is held to be fully conversant with all the conditions thereof and if he should neglect to safeguard himself in the manner laid down he has only himself to blame. The quantity surveyor's basic duty is surely to administer the contract as he finds it as between the parties thereto and without fear or favour. There cannot be many builders nowadays so careless of their rights as to risk the repudiation of a variation by failing to confirm instructions. If there be any such, they would be very unlikely to be caught twice. The answer to a literal reading of the question, therefore, appears to be in the negative. On the other hand, the quantity surveyor's services, as distinct from narrow duties, have come to be recognised throughout the building industry as contributing materially to the smooth running of contracts. It does happen that the quantity surveyor frequently knows more about the methods of both architect and builder in a contract than either knows about the other. In such cases, there can be little doubt that the appropriate words, dropped into the right ears at the proper time and with all the diplomacy which quantity surveyors have learnt it is so essential to employ, may save a great deal of trouble throughout the job and at the final account stage. Experience suggests that the avoidance of trouble between architect and builder usually makes the quantity surveyor's task less onerous, too. I remain of the opinion that, although not "morally bound," as in the question, the quantity surveyor is usually "well-advised" to follow this course.

Several questions have been submitted concerning the Standard Method of Measurement. As the Standing Joint Committee is available for authoritative pronouncements on its intentions, it would not generally be proper to attempt to interpret clauses of this document in these articles. Upon two such questions received, however, I am prepared to express an opinion. The Standard Method of Measurement, bricklayer clause 14 (*a*), directs that "Fair face of brickwork shall be measured on all exposed faces . . ." and the questioner asks whether it is right to make an omission of fair face where a variation order to that effect, relating to the external face of a wall measured "one brick wall fair faced both sides," has been issued. The wall in question, he says, faced waste land and the architect was quite happy to leave it rough and unpointed. My opinion is that, in the absence of specific instructions, the wall was correctly billed but as the contractor had undoubtedly been saved labour, an omission could be made. The second question is whether "exposed faces" refers to internal faces of gables and chimney stacks in roof-spaces, and the answer is that it does not. If I should be wrong in this opinion, it follows that there is at least one item that the most "claim-conscious" builders have overlooked—and this I cannot believe.

In the first article in this series, I dealt with the question of cash discount and profit on the fluctuations element in P.C. items. Now there has come the expected sequel concerning purchase tax. The example quoted is of thermoplastic tile flooring sub-contractors who quote labour and materials subject to 2½ per cent. cash discount but exclude discount on purchase tax on materials to comply with Government directions. It is possible that, legally, the figures should not be adjusted in any way but, by and large, the law is sensible and it does not appear reasonable that a figure "deemed to include 2½ per cent. cash discount" should only include such discount on a portion of the total upon which the contractor anticipates both discount and profit. I agree with the questioner that the fair way of dealing with such an item is to add one-thirty-ninth to the purchase tax and calculate contractor's profit on the revised total.

In my last article, I made reference to the difficulties which sometimes arise from the acceptance by architects, without reference to the quantity surveyor, of an estimate by the main contractor in respect of a variation. One member has written, quoting from memory from "my erudite contemporary" Mr. Rex Procter (Fellow), A.R.I.B.A., that under R.I.B.A. Contract clause 9, nobody but the quantity surveyor is legally entitled to measure and value variations, and has then asked how I would suggest this should be pointed out to the erring architect. The answer must depend upon how well you know the architect, but the following incident within my experience may be of interest. Shortly after the last war when steel was in short supply, a builder suggested to an architect that, to save time, steel sub-frames for windows should be omitted and wood substituted. The builder quoted for the timber frames and the architect issued a variation order accordingly which specifically accepted the builder's quotation. In the fullness of time, the variation order reached the quantity surveyor who, suspicious man, checked the quotation by measurement and fair *pro rata* pricing and found that although the builder's quotation amounted to less than the P.C. in the contract it was something approaching 50 per cent. in excess of the surveyor's figure. In this case, the architect was notified of the facts and, so far as I am aware, there has been no repetition of the incident.

By way of a change from R.I.B.A. conditions, the question has been asked whether under the National Schedules of Daywork Charges Schedule A, Labour, Note (iii), a principal working as a craftsman and accordingly being charged at tradesman's rate is also entitled to charge the additional 3*d.* per hour as a trade charge hand under the Working Rule Agreement. In spite of some opinions, the National Schedules were not designed to provide builders with butter and jam on both sides of their bread, and the principal is not, in my reading of the note, intended to be rated as a charge hand ; his extra remuneration is in the profit percentage and, probably, in an element of increased productivity resulting from his presence on the job! In other words, Note (iii) means just what it says and no more.

I still have quite a number of questions to answer but this fact need not deter members from sending letters—it will only mean they will have to wait longer for their points to be discussed.

Law Reports on Building Cases

Skill and Judgment

Hayes, Trustee to Preload Company of Canada v. City of Regina (1960) 20 D.L.R. (2d) 586 (Canada)

In the Supreme Court of Canada. Locke, Cartwright, Fauteux, Abbott and Martland, J.J.

The City of Regina entered into a contract to purchase certain patented concrete pipes for a water main.

The pipes were of a highly specialised nature and the contractors were both the manufacturers and the sellers. The city made extensive inquiries before making the contract as to the suitability of the pipes. They also relied on the engineer of the manufacturers (the appellants) who assured them the pipes were suitable and advised the addition of a chemical which in fact made the pipes unsuitable.

HELD :—

that the contract was for the sale of goods for a particular purpose and bought by description involving reliance by the buyers upon the skill and judgment of the sellers.

Martland, J., in giving the judgment of the court, held that for a warranty to apply under section 14 (1) of the Sale of Goods Act, 1893, it was not necessary that a purchaser should rely totally and exclusively on the skill and judgment of the seller. Reliance on such skill and judgment to a substantial extent is sufficient.

NOTE

Compare *Duncan* v. *Blundell* (1820) 3 Stark (N.P.) 65 M. and P. 548.

In that case a stove was erected with a smoke-pipe under a floor. The scheme was completely useless and the stove could not be used.

In the judgment, *Bayley, J.*, said :—

" Where a person is employed in a work of skill the employer buys both his labour and his judgment ; he ought not to undertake the work if it cannot succeed and he should know whether it will or not ; of course it is otherwise if the party employing him chose to supersede the workman's judgment by his own."

It would appear to follow that where by the terms of a contract any matter is left to the contractor, he is expected to exercise judgment, in addition to skill, and in that case, in the event of failure, the responsibility would seem to be solely that of the contractor.

The principle does not, of course, apply where the contractor is either working to orders or following instructions given by means of a drawing, specification, bill of quantities or other means by which his judgment is superseded by the judgment of another.

Hayes v. *Regina* shows that the contractor, whether in a contract for sale of goods or, it is suggested, for work and materials (though that was not mentioned in that case), must use proper skill and judgment, even where the employer has partly relied on his own judgment, so long as the reliance upon the contractor's skill and judgment is substantial. What is substantial is a question of fact.

REX PROCTER (Fellow), A.R.I.B.A., and
NORMAN F. STOGDON, B.A. (Jurisprudence) (Oxon.), B.C.L.

Quantity Surveyors Committee

EXTRACTS FROM THE MINUTES

A meeting of the Quantity Surveyors Committee was held at the Institution on 18th May 1960, and extracts from the Minutes are published below.

Congress of the Federation Nationale de Metreurs Verificateurs Patentes de France

The Chairman attended the Banquet held during the Congress at Lille on 21st May, 1960, and presented a silver cigarette box on behalf of the Institution.

British Standards Institution : Stationery for Quantity Surveyors : Draft Standard

A draft standard for stationery for quantity surveyors has been received from the British Standards Institution.

" The Measurer's Jewel " (1762) : Gift to the Institution Library by Mr. G. P. Vale (Fellow)

A copy, dated 1762, of a book entitled " The Measurer's Jewel " has been presented by Mr. Vale, as a mememto of his 25 years service on the Committee. The book has now been included in the Institution Library.

London (City and Eastern) Branch : Chairman's Visit

The Chairman attended a meeting of the Branch in May, 1960, when he spoke on the work of the Committee.

J.O.Q.S. Residential Course " Below Ground Level "

The Committee have received a report on the successful Residential Course held between 22nd and 24th April, 1960, on the subject " Below Ground Level " and have congratulated the Junior Organisation Quantity Surveyors Committee on the organisation of the course.

Cost Research Panel : Current Activities

The Committee have received a report on the successful "post-graduate" course in Cost Planning which was held between 9th and 12th May, 1960. Further courses are being considered to satisfy the outstanding demand from members.

List of Members

The Committee have noted that the Council have agreed that the List of Members to be published in 1961 should contain a topographical section and also the various items of information requested by the Quantity Surveyors Committee. Further details of the 1961 List of Members are published on page 5 *ante*.

Gloucestershire, Somerset and North Wilts Branch : Quantity Surveyors' Section

Mr. Cyril Sweett (Fellow), accompanied by Mr. I. G. Neilson, visited the section at Bath on 28th April, 1960.

London Association of Master Stone-masons : Apprentices' Annual Examination

Mr. C. W. R. Lynch (Fellow), attended the examination on Saturday, 28th May, 1960.

Vote of Thanks to retiring members

Messrs. T. Cuthbertson Hill, R. L. Everest, R. W. Hayward and Leonard Fletcher are now retiring from the Committee, who have expressed appreciation of their services. In particular, they thanked Mr. T. Cuthbertson Hill who had served on the Committee since 1933, and had been the Committee's first provincial Chairman from 1948 to 1950.

Working Party on "All-In" Services and Package Contracts

The Working Party are proposing to send out an enquiry requesting information about the various types of "All-In" service and package contract.

Professional Practice : Preparation of Final Accounts by Quantity Surveyors

A letter has been sent to the Quantity Surveyors Sections of the Branches requesting information relating to the allegation that quantity surveyors were failing to prepare interim valuations and final accounts.

The Technical Information Needs of the Quantity Surveyor

The General Practice Committee have set up a Working Party to examine the technical information needs of surveyors in general practice ; the Quantity Surveyors Committee have agreed to the suggestion that liaison members should be exchanged between the Working Parties on technical information needs of both quantity surveyors and surveyors in general practice.

Fees : Revision of Scale No. 36 : Scale of Professional Charges for Quantity Surveying services

A report has been received from the Quantity Surveyors (Fees) Sub-Committee on the revision of Scale No. 36 ; it was agreed that the Committee should give detailed consideration to the Report during the summer recess and that the matter should be debated at the first meeting in the autumn of 1960.

Joint Committee for Technical Information in the Building Industry

The Council have approved the Committee's recommendation that the Institution should participate in a Joint Committee for Technical Information ; Mr. William James (Fellow), and Mr. M. F. Rice (Fellow), have been nominated as the Institution's representatives.

College of Architecture and Building in Central London

The Officers have invited Messrs. G. L. Coates, C. J. Eatough, E. Norman Harris, William James, A. H. Killick and James Nisbet to serve as members of the Working Party to formulate a syllabus for a Diploma of Technology in Quantity Surveying.

Ministry of Works : National Consultative Council : Investigation into trends of constructional activity as they affect quantity surveyors : Proposals for statistical survey

The Committee have noted the proposals for statistical surveys and agreed to co-operate with the Ministry of Works. The letter and questionnaire was circulated to all chartered quantity surveyors in England and Wales at the beginning of June for return by the 15th June, 1960. The letter has also been passed to the Scottish Branch.

Announcements

SETTLEMENT OF FINAL ACCOUNTS

From time to time, the Quantity Surveyors Committee have received reports that delays in the settlements of final accounts are still causing dissatisfaction within the building industry and, in particular, to clients. The responsibility for such delays is attributed to a number of causes and allegations of responsibility for these delays have been levelled in turn at all members of the building team.

The Committee have taken the view that if the building industry as a whole is to put its house in order and achieve greater efficiency, more stringent efforts must be made by all parties to the industry to achieve a quicker settlement of final accounts. The provision of information is of prime importance and the Committee have been informed that exhortations have been made recently by the contracting side of the industry and in particular to the various associations of specialists and sub-contractors.

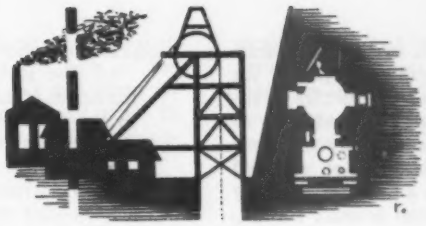
In requesting members to do all that they can to ensure the speedy completion of accounts, the Committee appreciate that with the heavy load of new work upon the industry, many difficulties arise through the laying aside of papers relating to "completed" jobs when new work must be tackled without delay.

The Committee hope that members will co-operate with their colleagues in the building team and ensure that no criticisms of delay can be levelled against the chartered quantity surveyor.

HEATING, VENTILATING AND DOMESTIC ENGINEERING WORK

Wage Increases

The amendments contained in the revised National Agreement as to Working Rules for craftsmen, operative apprentices and mates employed in the heating, ventilating and domestic engineering industry came into operation on 18th April, 1960. Wage increases of 3*d.* per hour and 3½*d.* per hour have been granted to craftsmen in the London area and in all other districts in Great Britain respectively. The standard rates for craftsmen are now 5*s.* 2½*d.* per hour in London (within a radius of 20 miles of Charing Cross) and 5*s.* 1½*d.* per hour in all other districts of Great Britain.



LAND SURVEYING AND MINING SURVEYING

The Use of the Airborne Profile Recorder and Associated Equipment for Photogrammetric Mapping

The following papers were presented at a meeting of the land surveyors section of the Institution held in March, 1960.

1. Application of the Airborne Profile Recorder to Photogrammetric Mapping

By T. BRIAN SMITH, A.M.I.Mech.E., Senior Principal Scientific Officer, War Office

It can be said that the development of the airborne profile recorder followed logically from the earlier developments of the radar altimeter, but whereas the radar altimeter was essentially a navigational instrument intended to provide an instantaneous indication of the height of the aircraft above the ground, the airborne profile recorder was designed to provide on a chart a continuous and permanent record of the height of the aircraft along the track flown by the aircraft.

It would not therefore be illogical to assume, as a first thought, that the ground profile data obtained in this way could be used to control air survey photography—flown simultaneously and identified with the profile trace—and so obviate the necessity for obtaining control on the ground, and it was just this thought which has prompted the War Office to initiate a detailed programme of research to investigate the accuracy of the profile recordings and then if need be to evolve the special techniques and methods which may be necessary to achieve a desired result.

As far as is known to the writer, the first serious thought given to the application of radar altimetry to mapping originated in Canada as far back as 1942 (or possibly even earlier), resulting eventually in practical trials being carried out using the AF/INA–88 radio altimeter and an NRC "prototype." Unfortunately little is known of the detail of this equipment or of the results achieved, although it is within the writer's memory that the AF/INA–88 employed a 1·25 centimetre narrow beam pulse transmitter, and the NRC "prototype" a 3·2 centimetre narrow beam pulse transmitter. A feature of these early trials, it is remembered, was, amongst other things, the investigation of discrepancies which had been observed between heights obtained over water and the heights obtained over land surfaces. The land surfaces were usually shown to be some 30 to 40 feet below the water surfaces.

The development of the later and improved models of the airborne profile recorder has led in more recent times to a greater appreciation of its possibilities both as a means for obtaining vertical control and as a means for carrying forward the scale, and in a paper delivered at the Commonwealth Survey Officers' Conference in Cambridge last year the writer was able to provide some information on the work of others —notably perhaps Blachut[1] in Canada and the Engineer Research and Development Laboratories in U.S.A.—using selected "Multiplex" equipment—of which the following is probably a useful abstract :—

TABLE I

A Summary of Mean and Standard Deviation of Random Errors of the APR Elevations (H) (Fig. 1)

—over relatively flat ground defined as being ground with slopes of less than 1 : 4

	APR Elevations (H)	
Altitude feet	Mean feet	Standard Error feet
5,000	−6·0	9·7
10,000	−4·6	14·0
20,000	+0·9	15·6

—over "rugged" ground defined as being ground where slopes are in excess of 1 : 4

	APR Elevations (H)	
Altitude feet	Mean feet	Standard Error feet
5,000	+8·9	67·6
10,000	+37·7	156·4
20,000	+118·0	134·0

The responsibility for the installation of the equipments and the carrying out of the flying programme as part of the United Kingdom exercise was entrusted to Hunting Aerosurveys (London) under a contract placed by the Ministry of Supply (now the War Office). The Air Ministry Meteorological Office, by kind permission of the Director, supplied the special daily weather forecasts, with information relating to the structure and height of the 500 mb pressure surface, (approximately 18,500 feet) on which surface both the area in Devon and Somerset and the area in Wales were flown in 1958 and 1959.

Although it was not essential to the satisfactory operation of the APR equipment, it was decided as a feature of the United Kingdom experiment to extend the usefulness of the exercise with the installation, as an addition to the APR and forward facing oblique camera installations used in earlier trials, of a Doppler navigation equipment, for the purpose of obtaining accurate and continuous recordings of the angle of drift as well as the distance between successive survey photographs. It is felt that the added information provided by the Doppler equipment, combined with its accuracy, might very well extend the usefulness and accuracy of the method in areas where ground control is either sparse or absent entirely.

The equipments as installed in a DC 3 Dakota aircraft of the Hunting organisation, are and can be described as follows :—

1. *The Airborne Profile Recorder, Mark 5*—

as manufactured by Canadian Applied Research Limited, of Toronto, Canada, under licence from The Photographic Survey Corporation Limited, also of Toronto, is basically an electronic altimeter utilising a pulsed micro-wave radar beam directed vertically downwards towards the ground and measures and records the distance between the aircraft and the ground or, to be more strictly accurate, the average distance to all points within the area covered by the width of the beam—which for the Mark 5 equipment is 1 degree. The pulse rate is approximately 2,000 per second which is adequate for the operation of the automatic timing circuits and is sufficient to provide a statistically favourable number of measurements.

The equipment has two separate and distinct measuring systems (see Fig. 1) :—

(*a*) The radar altimeter to measure the ground clearance h_1 h_2 . . . h_n.

(*b*) A sensitive pressure altimeter for measuring height deviations Δh_1, Δh_2 . . . Δh_n

Two simultaneous and continuous records are provided on a continuously moving chart :—

(*c*) The ground clearance by h_1, h_2 . . . etc., *i.e.*, the height of the aircraft above the ground as determined by the radar altimeter. This function is independent of the datum stabiliser and is recorded by the blue pen.

(*d*) The ground profile, which is derived from the ground clearance h_1, h_2, etc., with a correction Δh_1, Δh_2, etc., applied from and by the datum stabiliser and is recorded by the red pen. This function is dependent upon the inclination of the isobaric reference surface.

In addition, the operation of the survey camera shutter is indicated on the chart by a deflection of both the clearance (blue) and the profile (red) pens and the operating of the positioning camera by a fiducial mark at the edge of the chart.

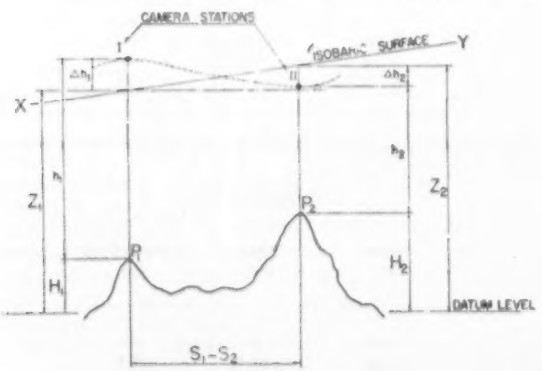


FIG. 1

2. *The Doppler Navigator*—

is the Type AD.2000 as manufactured by Marconi's Wireless Telegraph Company, Limited of Chelmsford, England, and is essentially a self-contained navigational system which derives ground speed in knots, distance gone in nautical miles, indicated on a counter to one-tenth of a nautical mile, and angle of drift in degrees.

The system is capable of measuring drift to 0·1 degrees and distance along the track (obtained by integrating the ground speed with respect to time) to an accuracy of 0·16 per cent. Along and across track information is obtained as a function of the aircraft heading, drift and ground speed. Those who may be interested in studying the general principles of the operation of Doppler are referred to an article by Beck in "The Wireless World"—Volume 65, for May, 1957.

3. *Vertical Survey Camera*—

a 9-inch × 9-inch "Wild" RC5a fitted with a 6-inch f/5·6 "Aviogon" Lens.

4. *Positioning Camera*—

is a 35 millimetre C.A.R.L., Type 232 Mark 7, fitted with a 28 millimetre f/3·5 lens and is fixed to the APR antenna reflector and accurately aligned so that its axis is parallel to the axis of the radar beam. This provides the identification between the APR chart and the corresponding detail on the survey photograph. As has been mentioned, the "firing" position of the positioning camera in relation to the profile pens is recorded on the edge of the APR chart.

5. *Forward Looking Oblique Camera*—

a 9-inch × 9-inch Williamson "Eagle" Mark 2, fitted with a 6-inch f/5·5 Ross wide-angle lens.

6. *Instrument Recording Camera*—

a 5-inch × 5-inch Williamson F.24, fitted with a 5-inch f/4 Lens.

7. *Instrument Display Panel*—

on which is conveniently grouped and mounted the Doppler and other information recorded during the flight. This is photographed by the instrument recording camera at each exposure in the vertical survey camera.

Ideally, in order that the recorded measurement shall indicate the true height of the ground with reference to a selected datum, which in turn either is or can be related to mean sea level, it is desirable that the aircraft is flown at a constant height above the selected datum, but in practice this is clearly not possible due in the main to the variation in height of the constant pressure or isobaric surface, and in part, to the accidental variations in height of the aircraft about this surface.

These conditions are best illustrated with reference to Fig. 1, where the dotted line represents the path of the aircraft about the sloped isobaric surface XY and where :—

H_1 — is the known height of the point P_1 above some reference surface (usually mean sea level).

H_2 — is the unknown height of the point P_2 above the same reference surface.

h_1 and h_2 — are the radar measured heights of the aircraft above the points P_1 and P_2.

Δh_1 and Δh_2 — are measured height deviations of the aircraft with reference to the isobaric surface XY.

Z_1 and Z_2 — are the geometric heights of the isobaric surface above mean sea level of the points P_1 and P_2.

For the particular case illustrated in Fig. 1 it will be seen that :—

$$H_2 = \{H_1+(h_1-h_2)-(\Delta h_1+\Delta h_2)\}+Z_2-Z_1 \quad \ldots \quad (1)$$

The signs for positive or negative values Δh_1 and Δh_2 will depend upon whether the aircraft is above or below the isobaric surface.

While for certain defined areas it would be possible to obtain accurate meteorological information relating to the pressure distribution in the upper atmosphere, there are considerably larger areas over which information of the pressure distribution will not be available, and in the main these will be the areas where surveys using APR techniques are most likely to be carried out. This is a subject which has been investigated by T. J. G. Henry(3) of the Meteorological Division of the Department of Transport, Toronto, Canada, whose theoretical analysis of the problem has suggested a means for determining the slope of the pressure surface from observations of the angle of drift of the aircraft.

It will be seen by reference to Fig. 2 that (Z_2-Z_1) is the slope correction to be added to the apparent height as measured by the APR to allow for the slope of the isobaric surface and has been shown by Henry to be given approximately by the following expression :—

$$Z_2-Z_1 = \frac{2\omega A}{g} \text{ Sin L (Sin } \delta) (S_2-S_1) \quad \ldots \ldots (2)$$

Where :—

A — is the true air speed in centimetres per second.

Z_1 and Z_2 — are the geometric heights above the datum level in centimetres.

g — is the local value of gravity in centimetres per second^2.

ω — is the angular velocity of the earth's rotation in radians per second.

L — is the latitude.

δ — is the angle of drift in degrees.

(S_2-S_1) — is the horizontal distance between two points P_1 and P_2 along the track in centimetres.

If however the distances (S_2-S_1) are measured in statute miles and the true air speed in miles per hour as they usually will be, the height Z in feet, and ω is $72{\cdot}91\frac{1}{2} \times 10^{-6}$ radians per second :—

$$Z_2-Z_1 = \frac{2\times 72{\cdot}91 \times 10^{-6} \text{ Sin L Sin } \delta\ (44{\cdot}7\text{A}) \times 1{\cdot}609 \times 10^5 (S_2-S_1)}{30.48g}$$

$$= \frac{34.41 \text{ A Sin L}}{g} \times \text{Sin } \delta (S_2-S_1) \quad \ldots \ldots \ldots \ldots (3)$$

Clearly for a particular area where changes in time and latitude are not appreciable and where the air speed is reasonably uniform $(34{\cdot}41 \text{ A Sin L})/g$ can be worked out as a constant which can be denoted by " k " then :—

$$Z_2-Z_1 = k \text{ Sin } \delta (S_2-S_1) \quad \ldots \ldots \ldots (4)$$

In northern latitudes the value found for (Z_2-Z_1) should be subtracted from the measured radar height " h " when

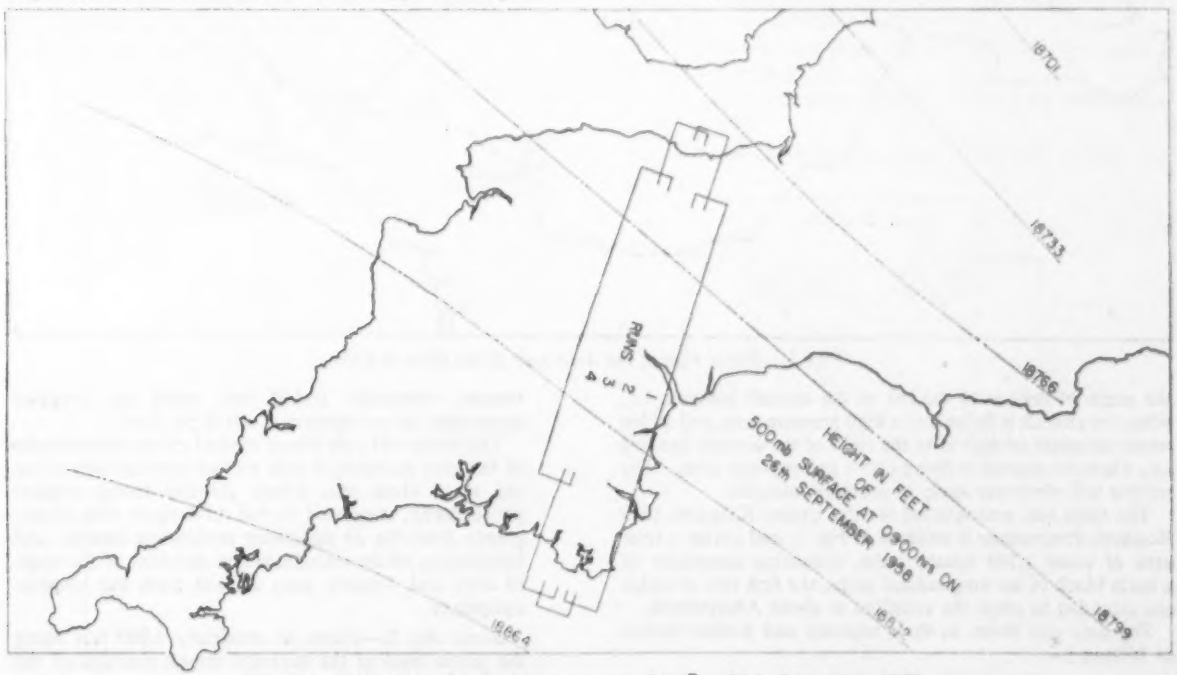


FIG. 2.—*Flight Plan, Devon/Somerset area flown on 26th September, 1958.*

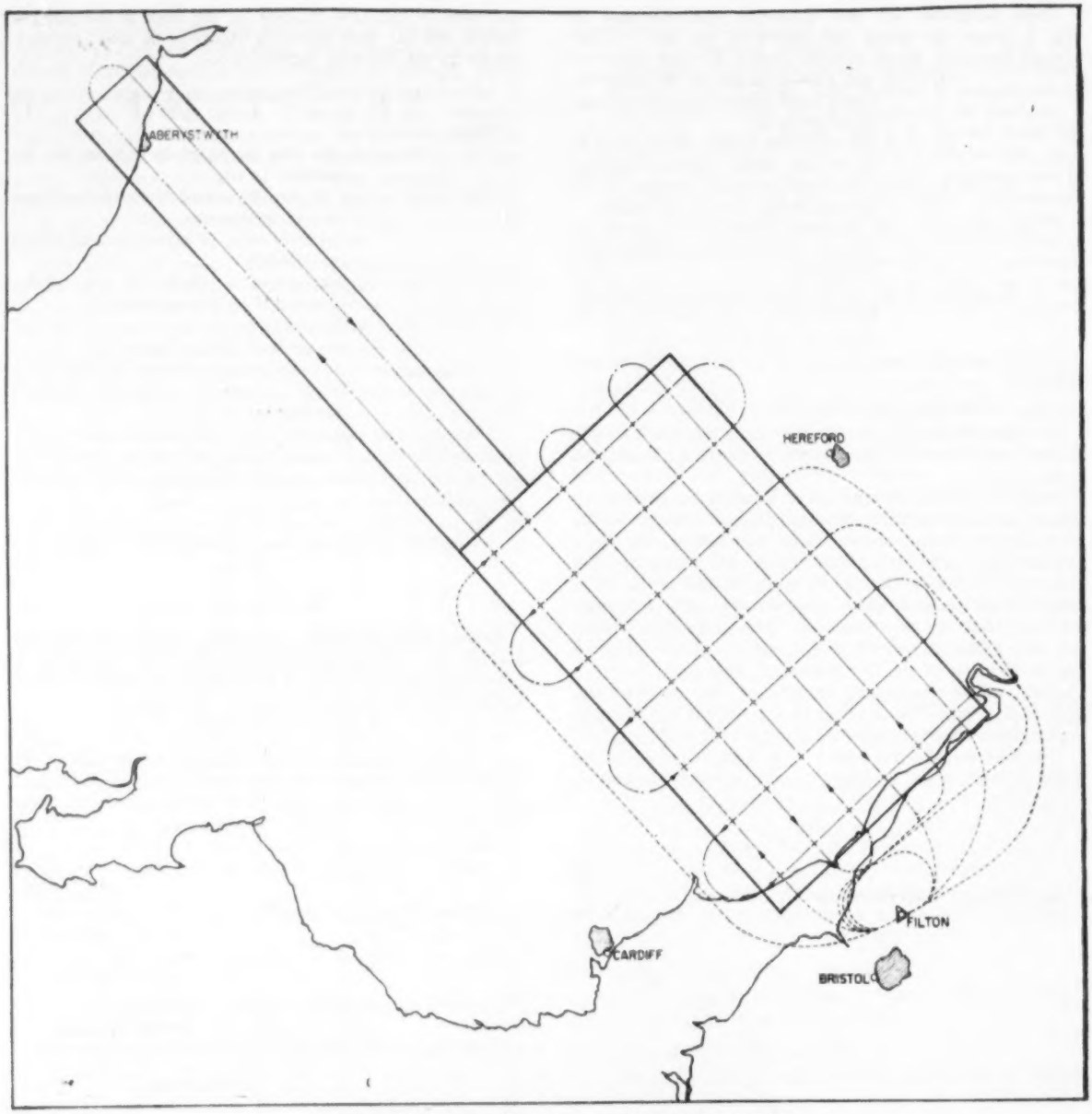


FIG. 3.—*Flight Plan of the Area over Wales flown in* 1959

the angle of drift is to the left of the aircraft heading, *i.e.*, when the aircraft is flying into a high pressure area, and added when the angle of drift is to the right of the aircraft heading *i.e.*, when the aircraft is flying into a low pressure area. The reverse will obviously apply in southern latitudes.

The main test area selected for the United Kingdom 1959 Research Programme is outlined in Fig. 3, and covers a total area of some 1,300 square miles, consisting essentially of a main block of six longitudinal strips, the first two of which are extended to cross the coastline at about Aberystwyth.

The area was flown as three separate and distinct sorties as follows :—

Sortie No. 1.—Flown at the height of the 500 mb surface, nominally 18,500 feet, using the Doppler equipment for navigation of the flight lines.

This sortie will yield 6-inch vertical survey photography of the area including 6-inch vertical photography along the seven cross ties, 6-inch forward facing oblique photography, supported by full APR cover with photography from the 35 millimetre positioning camera, and information of the magnitude and direction of the angle of drift and distance gone derived from the Doppler equipment.

Sortie No. 2.—Flown at nominally 6,000 feet along the centre lines of the common lateral overlaps of the vertical photography obtained from the first sortie but

excluding the cross ties ; using the Doppler equipment for navigation of the flight lines.

This sortie will yield full APR cover with photography from the 35 millimetre positioning camera, and Doppler information as described for the first sortie.

Sortie No. 3.—A limited selected area within the main area flown at the height of the 500 mb surface entirely by visual navigation methods, *i.e.*,—without aid from the Doppler equipment. This sortie as with the first sortie, will yield 6-inch vertical survey photography of the area supported by APR cover with photographs from the 35 millimetre positioning camera, and manually recorded information of the observed angle and direction of drift, with manually recorded information of the observed indicated air speed.

It will be noted that the essential difference between sorties Nos. 1 and 2, and sortie No. 3, is that sorties Nos. 1 and 2 were flown using the Doppler equipment for navigation of the flight lines, whereas sortie No. 3 was navigated entirely by visual methods.

The details of the plan of test for the photogrammetric analysis of the photographs obtained during the sorties described above are, at the time of writing these notes, still under discussion with and between the agencies which will be co-operating in this work. However there must be the overall plan in which the objectives are clearly stated and foremost of these, in the opinion of the writer, are :—

(1) The accuracy with which the area can be mapped without control of any sort other than the data supplied by the APR equipment, the visual observations of the magnitude and direction of the angle of drift and the observations of the indicated air speed (sortie No. 3). The photographs containing the sea areas would not for obvious reasons be used in this investigation.

(2) The accuracy with which the area can be mapped without control of any sort other than the data supplied by the APR equipment, the Doppler information of the magnitude and direction of the angle of drift and the recorded indicated air speed (sorties 1 and 2). As with the first experiment the photographs containing the sea areas would not be used in this investigation.

(3) To investigate, separately—for each of the experiments described above—the improvement in accuracy which would result from the inclusion of control in varying densities. It would be permissible in this exercise to consider as a separate experiment the special case of using the photographs containing the sea areas.

REFERENCES

1. " Photogrammetria," Volume 12, No. 4, 1955-56.
2. " Determination of Topographic Profiles by use of Radar and Pressure Altimeters " (unpublished).

2. *A Description of the Airborne Profile Recorder, its Installation and Operation*

By ROY HALL, B.Sc., Research Officer, Hunting Surveys Limited, London

1. GENERAL PRINCIPLES

The airborne profile recorder Mark 5 manufactured by Canadian Applied Research Limited of Toronto under licence from Hunting Survey Corporation Limited of Toronto (formerly Photographic Survey Corporation Limited), consists of two distinct measuring systems :—

(*a*) a very accurate radar altimeter which measures the height of the aircraft above the ground, *i.e.*, terrain clearance ;

(*b*) a datum stabiliser, which is an instrument capable of measuring the small relative pressures due to the vertical deviation of the survey aircraft from a constant pressure surface.

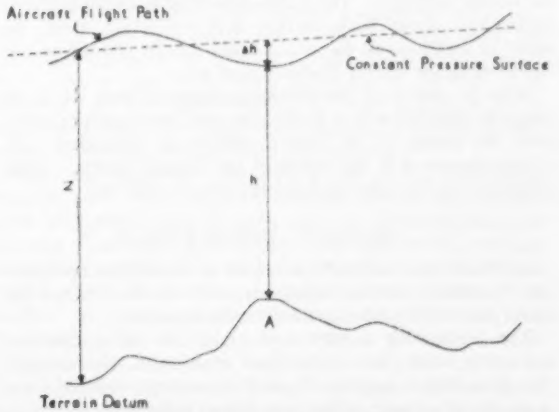


FIG. 1.—*Relationship between aircraft flight path, constant pressure surface and terrain*

In Fig. 1 the survey aircraft is shown as being at a height h above the point A. The aircraft is also Δh below the constant pressure surface which earlier in its flight was at height Z above a terrain datum. The radar altimeter measures h and the datum stabiliser Δh ;

$h + \Delta h$ is therefore the depth of A below the constant pressure surface.

A continuous chart is used to record the functions h and $h + \Delta h$.

Fig. 2 shows a block diagram of the APR system.

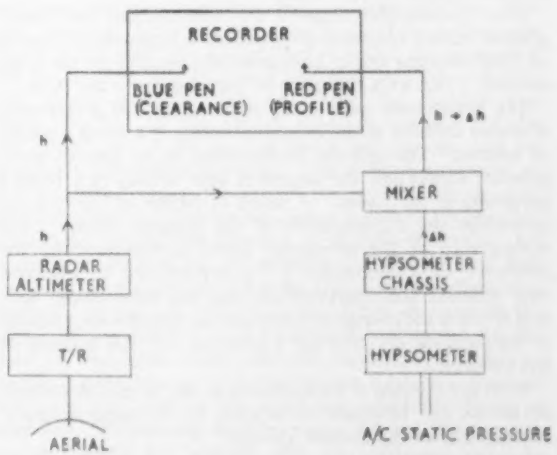


FIG. 2.—*Block diagram of the APR*

2. COMPONENT PARTS OF THE SYSTEM

(a) *Radar Altimeter*

The principle of operation of radar altimeters is the measurement of the transit time between the transmission of a pulse from the aircraft to its subsequent reception in the aircraft after reflection from the terrain beneath the aircraft.

In the survey application the height of the aircraft above the point on the ground, vertically beneath the aircraft, is required. For precision therefore the energy transmitted by the antenna should be of a short wavelength and confined to a narrow beam. Practical limits are set by the power available for transmission and the physical dimensions of the aerial system.

The Mark 5 APR operates in the 3 centimetre waveband and the beam width is confined to 1 degree, by using for the aerial system, a dipole at the focus of a parabolic reflector 44 inches in diameter.

(b) *Datum Stabiliser*

In the APR the terrain illuminated by the radar beam is referred to a constant pressure surface. Although the pilot endeavours to fly on the constant pressure surface, slight deviations from it are unavoidable, and must therefore be measured. Now if we consider a height deviation Δh occurring at a height h where the atmospheric pressure is P and ΔP the pressure change associated with the height change Δh, then for a constant Δh, ΔPdecreases as h increases.

Traditionally, pressure measurement in aircraft has been made by capsules (*e.g.*, in altimeters, airspeed indicators, rate of climb indicators, etc.) and these were used in early versions of the APR for measuring the pressure changes ΔP due to height deviations Δh; thus sensitivity decreased with altitude.

From ancient times it has been known that the boiling point of a liquid decreases with pressure. If T is the boiling point of a liquid at height h and pressure P, and ΔT the change in boiling point due to a change of pressure ΔP, then as h increases and P decreases, ΔT will increase, for a constant ΔP. We thus have the case that for a constant Δh, as h increases ΔP decreases, but for a constant ΔP, ΔT increases. Providing that ΔT can be accurately measured this system has an advantage over the capsule type. An instrument measuring pressure changes by boiling point changes is called a hypsometer.

After considerable research and development the Photographic Survey Corporation produced a hypsometer capable of rapid response and of high sensitivity suitable for use in an aircraft. This took the place of the capsules in the APR.

The hypsometer used in the APR consists of a thermally insulated cylinder at the bottom of which is a small quantity of toluene. The cylinder is connected to an aircraft static pressure supply and the toluene is kept boiling by a resistor immersed in the liquid. A series of baffles in the cylinder encourage the condensation of the toluene vapour. The temperature of the condensed liquid is measured by the resistance of a thermistor. Thermistors can be obtained with different characteristics and one has been chosen such that if ΔR is the change of resistance associated with a change in temperature ΔT then for a constant Δh, ΔR is more or less constant.

With this method of measurement it can be seen that height deviations can be measured sensibly to the same accuracy, independent of the aircraft altitude.

(c) *Positioning Camera*

In order that intelligent use may be made of the APR information it is necessary to know precisely what area of ground was illuminated by the radar beam at any instance. This is achieved by a camera, rigidly attached to the aerial system, and whose axis is aligned with the radar beam. The positioning camera used is remotely controlled and has a format 18 millimetres × 24 millimetres and a lens of 28 millimetres focal length. A veeder type counter is recorded on each exposure and an impulse is provided so that an external record of exposure number may be kept by the APR operator. This impulse also makes a fiducial mark on the APR chart.

(d) *Recorder*

A continuous record of the APR information is made on a chart 11 inches wide which moves at 10 inches per minute. One pen records in blue the radar height or ground clearance (the function h of Fig. 1). Another pen records in red the function $h+\Delta h$. The red pen thus traces out a profile of the ground relative to the chosen constant pressure surface.

The full width of the chart represents 1,000 feet and when either pen gets close to an edge both pens make a 500-foot step. The stepping is automatic and its value is indicated on a dial. The ground clearance, for instance, is therefore the value of the step plus the chart reading.

Each time the positioning camera makes an exposure an impulse is sent to the record which produces a fiducial mark on the edge of the chart. Because both clearance and profile pens record on the same chart the pens are staggered so that each can traverse the complete width of the chart. Therefore at the beginning of each chart roll the APR operator makes each pen traverse the chart so that a pen calibration is obtained. The location of the positioning camera fiducial is also recorded during this calibration. In the subsequent data reduction the pen calibration enables the terrain to be correctly related to the profile and clearance records.

Furthermore each time the main survey camera makes an exposure, both profile and clearance pens give a "kick."

3. GROUND ALIGNMENT

Apart from ensuring the correct electronic functioning of the equipment, the most important ground operation is the adjustment of the positioning camera in relation to the radar beam. For this, a corner reflector is suitably positioned so that it is at least 2,000 feet from the APR aerial unit, which, in turn, is suitably mounted so that its beam is pointing at the corner reflector. The aerial mounting is capable of fine adjustment about both vertical and horizontal axes. By using an oscilloscope the aerial beam can be aligned on the corner reflector within 10 minutes of arc.

With the shutter of the positioning camera open, the aerial image is observed with a microscope and the camera adjusted until the image of the corner reflector is coincident with a cross engraved in the centre of the camera format. Thus alignment of the radar and camera axes is achieved.

4. AIRCRAFT INSTALLATION

In aircraft such as the B17 there are no installation problems but in aircraft with no bomb bay, such as the Dakota, the aerial cannot be suppressed within the fuselage.

The positioning camera and aerial are on a common mounting which has to be fixed underneath the aircraft. The mounting is capable of initial adjustment about the roll axis and adjustment as required during flight in pitch.

A mercury switch levelled to the camera format gives a remote indication in the aircraft. If tilted forward one

indicator lamp lights and if tilted aft another one lights.

A reversible motor remotely controlled by the APR operator adjusts the aerial mounting until either both lights are on or else the lights are flashing alternately.

Access to the camera from inside the aircraft has to be provided, also a waveguide connection from the transmitter/receiver to the aerial. The whole of the assembly below the aircraft is surrounded by a fairing in which is a resin reinforced fibreglass window for the aerial and a glass window for the positioning camera.

The recorder in its console, which includes all the circuitry exclusive of the transmitter/receiver, can be placed at any convenient station in the aircraft. The hypsometer is connected to a convenient static pressure supply and the 115 V 400 cycles AC to operate the APR are obtained from the aircraft 28 V. DC by a suitable inverter.

After installation in the aircraft the aerial unit is adjusted for lateral tilt relative to the aircraft datum.

By placing the corner reflector at a known distance from the aircraft and a plane reflector beneath the aerial, the radar altimeter can be calibrated.

5. ANCILLARY EQUIPMENT

(a) Drift Measuring Device

As explained in Mr. T. Brian Smith's paper the slope of the constant pressure surface may be determined by keeping a record of the aircraft drift. The most accurate way of measuring drift is by a self-contained Doppler navigator such as the Marconi's Wireless Telegraph Company Limited, Type AD2000, which gives drift to an accuracy of 0·1 degrees. For a full description of this apparatus, its installation and application, reference may be made to : " The Application of the Doppler Navigator to Airborne Surveys," by R. Hall. Hunting Group Review No. 3, 1959.

It is not always necessary to measure drift to 0·1 degrees, in which case a normal survey navigating sight or camera sight may be used, either of which would give drift to 1 degree. Navigating sights are part of the normal survey aircraft installation.

(b) Survey Camera

In most cases when the APR is used, a survey camera will be operated simultaneously with the APR recording. Again survey aircraft are already modified to take such equipment.

6. AIR CALIBRATION

In order that the deviation applied by the hypsometer shall be correct the equipment is adjusted by flying at the operational altitude over a reasonably large expanse of water, *e.g.*, the sea, a lake or a large river. This need not be in the operational area nor is the large expanse of water required on each flight so long as the flying altitude does not have to be changed. In fact where several altitudes are likely to be required the setting up procedure should be carried out for each and the dial settings noted for later use.

With the equipment functioning and at the operational altitude over water the APR operator adjusts the recorder until both profile and clearance pens are indicating the same reading. The pilot is then instructed to fly at say 150 feet above this height. The clearance will have been increased by 150 feet and when not properly adjusted the correction applied by the hypsometer will not be 150 feet. The indicated profile will therefore not be at the same level as before, so the hypsometer sensitivity is adjusted until it is. The flying altitude is now changed until it is 150 feet below the datum and if the sensitivity has been correctly adjusted then the indicated profile will not change.

On the initial flight, checks are made on the verticality of the radar beam. Flying over flat terrain the aircraft is rolled first to port and then to starboard. In both cases the clearance should increase. If the clearance decreases before increasing in one case then the beam is inclined to the vertical in the lateral plane and the amount of tilt can be estimated.

A survey camera is also carried and with the aircraft straight and level the camera is carefully levelled. The aerial is also adjusted for fore and aft level and several synchronised exposures made with the survey camera and the positioning camera. After processing, the locations of the centre crosses of the positioning camera photographs are plotted on the survey camera photographs. The difference between the plotted points and the centre points of the survey photographs is measured and the tilt of the radar beam computed. The airborne and photographic results are compared and the aerial mounting adjusted accordingly.

7. AIRBORNE OPERATION

As soon as possible after take-off the equipment is switched on to allow a period of not less than 20 minutes for the hypsometer to reach a stable condition. During this period the radar can be checked for locking on and in conjunction with the camera operator the camera fiducials can be functionally tested and a pen calibration made on the chart. Each roll of chart paper must have its own pen calibration.

When the hypsometer has reached stable conditions and the aircraft is at the operational height the hypsometer is balanced so that it is reading within the indicated range of $\pm$ 150 feet. The sensitivity of the hypsometer is next adjusted along the lines indicated under " Air Calibration." As the equipment will have been previously set up for this altitude only a small area of water is required. If this is not available any convenient flat area may be used and in the extreme when no suitable surface is available the previously determined settings may be used.

So that the maximum use may be made of the records, suitable accurately surveyed datum points are used. These need not be on the actual run but are crossed before and after each run or series of runs. More than one datum point may be used according to the flight pattern and availability of suitable sites for datum points. The ideal datum point is a water surface whose height is known, but in practice, any clearly defined level surface may be used. The aircraft flies over the datum point with all the equipment, including cameras, operating and correctly levelled. The APR operator annotates the record carefully, noting the datum point used, the height step at which the equipment was functioning, the indicated airspeed, heading and drift and camera exposure numbers. With the cameras and charts switched off the aircraft takes up position for the first actual run, at the start of which the cameras and the recorder are switched on again. The chart is annotated as to run number, and as the aircraft progresses along the run, survey camera and positioning camera numbers are recorded against the appropriate fiducials at suitable intervals. All height steps are marked as they occur and airspeed and drift are recorded, particularly when the navigator finds they have changed. If the aircraft makes a change of heading, the period during which this is happening is recorded on the chart as the radar beam may not necessarily be vertical during this manoeuvre. During the run a watch is kept on the fore-and-aft level of the aerial and adjustment made as necessary. Positioning camera exposures are made automatically every 5–7 seconds with an additional exposure coincident with the survey camera exposure when the latter is being used.

3. *Application of the Airborne Profile Recorder as an Aid to Mapping*

By J. A. EDEN (Professional Associate), of the Directorate of Overseas Survey

METHOD 1

One application which has been much advocated is to use the APR directly for drafting a profile of the ground immediately underneath the aeroplane. These profiles are reliable only at those places where the ground surface is locally flat and free from trees or tall vegetation, as the presence of steep slopes or trees within the 1 degree beam of the radar reflector give rise to ambiguities and false measures of depth. This method is therefore restricted to suitable country.

By this method, the air photography which is the basis of the map must be obtained first of all. The APR is then flown down the lateral overlaps of this photography. The APR profiles obtained on this second flight are corrected by the Henry formula about which we have heard, and then provide height control in all those places where the ground on the traverses is locally flat and free from trees. They do not provide any plan control and this has to be provided by some other method such as a slotted template assembly laid to trigonometric control. Stereo models may now be set up in plotting machines which are scaled to the plan control provided by the slotted template assembly and levelled and heighted by the control from the APR profiles. If this control is thick enough—and this will depend on the frequency of locally flat places in the topography—it may be possible to take off the detail and contours immediately after erecting the models. More usually, however, it will be necessary to make preliminary photogrammetric extensions of the photography, and to adjust these as well as possible to the profile heights and slotted template plan positions, so as to provide a final framework of control to which the models are again set, one by one, for the purpose of taking off the detail and contours necessary to draft the map.

METHOD 2

Method 2 which I will now describe has been developed in Canada largely by Mr. Blachut. It can provide both plan and height control, and not only height control as in the case of method 1. By this method the APR record is obtained during the exposure of the survey photography so that there is no necessity for any additional flying.

The APR profile is not used directly. Instead the record is split into its two basic components, the hypsometer record, which is used to determine the heights of the exposure stations with respect to each other, and the record of the radar altimeter which is used to measure the depths of the ground below these stations and so establish the scale of the work.

Figure 1a shows the central section of a stereo model. 1 and 2 are the exposure stations. The depths of these exposure stations below the isobaric surface are obtained from the APR hypsometer record and by application of Henry's formula corrected to be depths below a horizontal surface. The two projectors of the plotting machine can now be set at their correct difference of height corresponding to those of the exposure stations. Thus one forms a model A'B'. One requires now to know a long distance in order to scale this model. Using APR this may be obtained from the radar altimeter record provided there are several locally flat areas to which good measures of depth can be obtained. The model may then be scaled by increasing

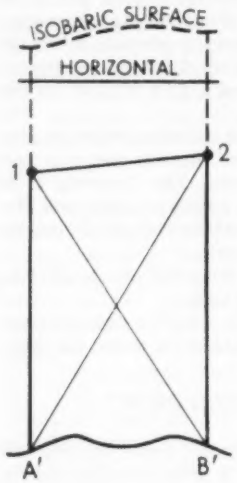


FIG. 1a

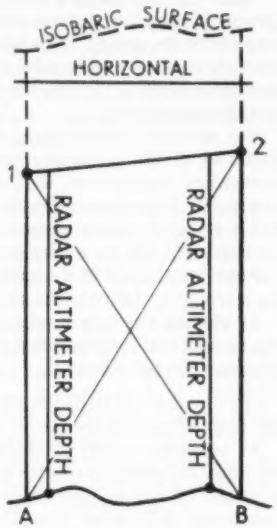


FIG. 1b

the air base until the depths from the projectors to the model are as indicated by the radar altimeter (Fig. 1b). One then obtains a model of the central section AB in which both heights and distances are correct to within the limitations of the method. By setting up all the models in this way the central sections AB may be pieced together to form traverses along the centre of each strip, in which all the heights and distances are similarly correct. Similarly by flying tie strips across the main direction of the stripping, other traverses may be run, and the whole system of traverses may be closed to form a control framework from which the heights of points off the central sections of the strips may be corrected for lateral tilt. The whole block thus adjusted then requires a minimum of one heighted and co-ordinated point, and one azimuth to position it on the spheroid. Models may then be reset to this control and detail and contours taken off.

Let us consider now what happens when there are insufficient locally flat places to enable the radar altimeter to be used to scale each model independently. In this case we proceed as shown in Fig. 2 with full lines. We start off with

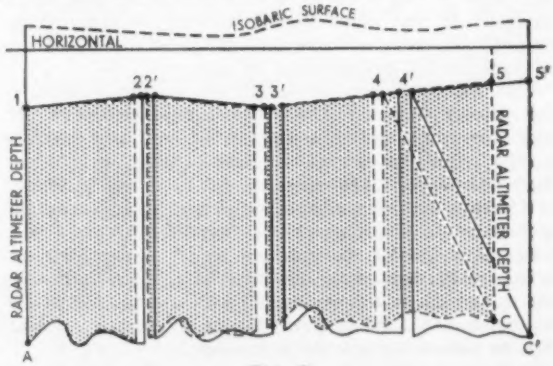


FIG. 2

one model that can be scaled by this means. For subsequent models the scale is then carried forward by comparing the distances between common points on adjacent models to produce a traverse AC_1. Eventually on reaching another locally flat place where the radar may again be used for scaling, it may be found that a scale error has accumulated, and the depth to C is longer than indicated by the radar. This is then corrected by reducing the air base of the last model to make this depth correct and proportionately reducing the air base lengths back to the first model, thus producing a correct traverse AC as shown in Fig. 2 with pecked lines. It will thus be appreciated that one is not dependent on having good locally flat places on each model when this method is used.

METHOD 3

I will now refer to a third method, identical with that just described except that instead of scaling from the radar altimeter one scales from a knowledge of distances determined on each plot from a stereo or Jerie template assembly laid to trig at primary density spacing. These techniques for determining plan positions are well known to be extremely good for conserving scale. An experiment with this technique is now in hand at Overseas Surveys.

Obtainable Accuracies

With regard to height determination, all three methods depend on the effectiveness of the Henry correction to correct the isobaric surface into a horizontal datum. This will depend on the weather conditions and it seems unlikely that any method can be devised to forecast this accuracy very reliably. Going by experience I would say that it would be dangerous to assume that in averagely good weather there would not be occasional warps of this horizontal to the extent of 20 feet or so, though much higher accuracies have frequently been obtained. In the Devon test area which consisted of four strips averaging 60 miles in length the standard error of the heights checked against 261 controls was under 12 feet. There were however two places where there was a warp of the horizontal datum to a maximum of 20 feet. This in spite of the fact that the contour of zero error could be drawn backwards and forwards throughout the area across its entire extent.

However, one must be careful not to claim that accuracies achieved on any test could be repeated and I think it would be exceedingly dangerous to assume that any heights measured from the datum of a corrected isobaric surface could be relied on to control contours at a smaller interval than 50 feet. They may be better, but it is necessary to forecast a conservative figure.

On the other hand the radar altimeter measures do form an extremely effective control on scale. When a best mean fit is made to these scale controls, scale error is entirely prevented from accumulating and one is left only with small random errors.

Economies of Use

The normal procedure followed to provide control for topographical maps with 50-foot contours is to lay down a triangulation to primary spacing and to supplement the height control by running closed aneroid traverses on the ground between these primary points. Indeed in most places where the Directorate of Overseas Surveys operates, the primary network already exists so that survey operations on the ground are restricted to running these aneroid traverses. This is not generally a very expensive operation but if it can be avoided altogether without any additional cost then it is clearly worthwhile. I hope to be able to show that by method 3 which employs only the hypsometer, one could always avoid the expense of these ground aneroid traverses, but I am not able to show this yet as my experiments are not complete. It is clear, however, that a simple hypsometer record taken at the time of the survey photography is a piece of instrumentation which could be provided at negligible cost.

This is not the case where the full APR instrument is used even if no additional flying is involved, because one must employ a skilled operator who can also service the equipment, and a special aircraft for the equipment. Some of these operational difficulties have been discussed in Mr. Hall's paper. The costs of operating the full APR are not therefore so small that they can be disregarded entirely and can mount up quite considerably if the aircraft is grounded for any length of time by the weather. Therefore, although I think this is a good method, and one which has many applications it seems unlikely that it would in all circumstances prove more economic than using a surveyor to provide height control by ground methods, in addition to his other duties.

We now come to consideration of the first method of using APR, a method which has been very widely advocated and I must admit that I find it extremely difficult to envisage any circumstances in which it would be economic. There may perhaps be some exceptions to this, particularly in the military field, and the Aden job about which we are to hear may be one of those exceptions. In this job, a plan map already existed and survey photography also existed from which this plan map had been made. At a remote period surveyors had been into the area and determined a number of astro fixes, but more recently the country had become dangerous for surveyors to move about in, prohibiting their use for supplementing this control. The requirement was only to contour the existing map, and I think it would be agreed that these unusual circumstances would not often be met with. What is extremely unfavourable in this method is that it requires that after the survey photography has been completed the area shall be flown again. Also it is necessary for the weather conditions to be good enough to obtain photography with the APR positional camera. Those who advocate the method argue that this weather hazard is not so great as that which applies at the time of the survey photography as the APR runs may be flown at a lower altitude under the clouds. Nevertheless there is a considerable weather hazard such that the cost of the flying cannot be predicted and it may well run into astronomical figures depending on how long the aircraft remains grounded by the weather. I cannot see that this method has anything to recommend it where the second and third methods I have discussed could be used, as these methods require no extra flying.

It has also been argued in favour of method 1 that it can produce results quicker than by any other method. This could only be true if it were possible to avoid a preliminary photogrammetric set up to adjust the control, and if it were possible to set up the models to the APR profiles and take off the detail and contours forthwith—but could one be certain of being able to do this?

It would certainly not be quicker if one set out to do this and then bumped into large residuals such that it was necessary to abandon the work and begin again and make the preparatory set up after all. Therefore method 1 does not recommend itself to me and I favour method 2 or possibly method 3.

CONCLUSIONS

To summarise, I would say that economic considerations need to be very carefully assessed before APR is adopted to replace ground survey techniques. The method is capable of providing good plan control and heights suitable for 50 feet contouring. Where plan control is available to primary density, it is probable that only the hypsometer and not the radar altimeter is necessary, but to use the APR by any method which involves additional flying is both unnecessary and prohibitively expensive in any but the most unusual circumstances.

The Aden Survey, 1959

By W. P. SMITH (Fellow), of Fairey Air Surveys

Task

The survey task was the contouring of an area of approximately 18,000 square miles in Western Aden Protectorate, at a vertical interval of 50 metres. Base maps, to a scale of 1/100,000, already existed. These had been prepared by slotted template/graphical methods and were based upon astronomical fixes.

Factors

Factors affecting the choice of method were :—

(1) Ground surveys could not be undertaken, for military reasons. Access to the area was limited to airstrips and a jeep track in the extreme east of the area. No reliable height control existed, although the sea coast formed the entire southern edge of the area.

(2) Good quality photographic cover (Eagle IX, f : 6 inches) to scale 1/80,000 was already in existence. This had been flown four years previously in north-south stripping. No airborne orientation data of any kind had been obtained at the time of photography.

This 1/80,000 scale cover comprised 812 exposures to cover the entire area. The operational ceiling of aircraft available at the time of the contouring project was 27,000 feet. Re-photography would have required not less than 4,000 exposures.

(3) The specification required that the contours should be drawn to fit existing planimetry. In the event, this presented some difficulty, but the initial requirement limited new mapping to contouring only.

Method

The method adopted was to accept existing photographic cover and to provide control :—

(*a*) in plan—from existing maps ;

(*b*) in height—from a complete APR Mark 5 installation.

Aircraft and Equipment

The aircraft used was a standard DC3 survey aircraft, with Pratt and Whitney 1830/90c engines, as normally used for photographic survey. The radar antenna, of 42-inch diameter, was attached to the outside of the aircraft fuselage, just rear of the two camera windows. No additional holes needed to be cut in the aircraft structure. The spotting camera used was a Beattie Varitron 70 millimetre equipment. For the purpose of this survey it was fitted with a 75-millimetre lens which gave a photographic scale of 1/60,000, from the flight altitude of 15,000 feet AMGL adopted. This compared conveniently with the existing survey photographic scale of 1/80,000. The latter photography being already four years old, it was feared that there might yet be difficulty in relating detail. Accordingly a Wold RC5a f 6-inches survey camera was carried, giving a photographic scale of 1/30,000.

Flying Height

The selection of flying height was made after reference to meteorological upper air charts for the period 1953–1958, at altitudes of up to 40,000 ft. (200 mb.). The 500 mb. level appeared to give good possibility of minimum pressure gradient and a flight altitude of 15,000 feet was accordingly selected. During the operation upper air conditions were checked after each day on which flying had taken place and the choice appeared to be justified by experience. The actual corrections to profiles arising from pressure surface deformation were calculated by Henry's formula. They were generally small and nowhere exceeded one-half contour interval. (Fig. 1.)

FIG. 1

ISOBARIC SURFACE CORRECTIONS
(using Henry's Formula)

Profile	Direction	Length Square miles	Total Correction feet
1 East	S—N	118	+ 6
1 West	N—S	121	− 6
2 East	S—N	108	+ 8
2 West	N—S	112	− 8
3 East	S—N	117	− 11
3 West	N—S	119	+ 11
4 East	S—N	110	+ 4
4 West	N—S	111	− 5
5 East	S—N	102	+ 5
5 West	N—S	102	− 7
6 East	S—N	78	+ 3
6 West	N—S	77	— 2
7 East	S—N	80	+ 2
7 West	N—S	80	− 2
8 East	S—N	56	− 3
8 West	N—S	58	+ 3
T/S A	W—E	72	− 5
T/S B	W—E	116	+ 2
T/S C	W—E	188	0
T/S D	E—W	222	+ 1
T/S E	W—E	221	− 29
T/S F	E—W	220	+ 26
T/S G	E—W	220	+ 29

From time to time flights were made seawards about 50 miles from the coastline. The resulting profiles revealed no trace of isobaric gradient.

Flight Programme

The existing 1/80,000 cover being flown in a north-south direction, all strips crossing the sea coast, eight photographic strips (approximately every fifth) were selected for profiling along both lateral overlap areas. The profiles were to commence over the sea surface, run north to the limit of the area and return south to the sea over the other lateral overlap. Additionally, east-west profiles were flown across the area, intercepting the photographic strips at intervals of approxi-

mately four forward overlaps. These runs also began and ended over the sea. The area would thus be sub-divided into blocks of about five strips, averaging four overlaps each. Within these blocks the two outside strips were fully controlled by APR profiles, whilst the intermediate strips had APR heights at the ends (the east-west profiles) as well as, in two strips of each block, along one edge.

This flight programme was carried out as planned, a total profile mileage, excluding positioning flights, of 2,600 miles being involved.

Field Operations

1. The flight crew was five in number :—

Two pilots, of whom one kept the flight path straight and level (following the repeater dial of the statoscope placed in the cockpit) and the other acted as navigator.

One camera operator, whose tasks were to supervise loading and smooth running of the 70 millimetre auxiliary and Wild Survey cameras. He also recorded drift and camera veeder counter numbers against time, at 3-minute intervals.

One APR technician, who operated the profile recorder, serviced chart pens, and observed antenna dislevelment.

One land surveyor, who co-ordinated the operation and assisted whenever necessary, particularly in the manuscript annotation of auto-step readings when flying over exceptionally rugged terrain.

2. Pre-flight checks were conventional, and consisted of :—

(*a*) Delay constant : to confirm the linearity of radar altimeter readings. This was done by checking against photogrammetric determinations of terrain clearance at differing altitudes.

(*b*) Parallelism of radar altimeter and spotting camera axes. This was done by flights normal and obliquely over a well-defined feature such as breakwater or straight section of cliff.

(*c*) Adjustment of input settings from the hypsometer, by undulating ($\pm$ 100 feet) flight over a water surface. The effect of the adjustment is to provide a level profile (terrain clearance $\pm$ height deviation from constant pressure surface) as against an undulating terrain clearance record.

3. A total of 75 flying hours were involved. The very large distances and the inhospitable terrain over which flights were made required special safety precautions by way of reporting procedure, although the long range of the particular Dakota aircraft used (9 hours) also reduced anxiety on this account.

Some unserviceability of equipment was experienced, notably in the recording system used for statoscope and altimeter.

Photogrammetric Analysis

1. The eight photographic strips along which profiles had been flown were observed in Zeiss Stereoplanigraph C8 to smooth local inaccuracies and at the same time to obtain the benefit of control of absolute Z errors which the profiles provided. The average (from eight strips) mean square difference, C8/APR, after construction of a height correction curve using the Zarzycki method, was 8 metres.

The following additional points were also observed :—

(*a*) Minor control points for subsequent photogrammetric plotting of contours, including tie points to adjacent strips.

(*b*) Selected points on east-west profiles, where these crossed the north-south photo strips.

The aerial triangulation was scaled to existing p.p. positions derived from the slotted template assembly. There was usually a scale misclosure, and due to the large relief range involved (0–6,000 feet) a correction was made to machine heights.

2. Control was selected from the profiles as follows :—

(*a*) By inspection of the profile, only areas of flat ground being used. For convenience, profile points coinciding with spotting camera fiducial crosses were used whenever possible, but it was occasionally necessary to interpolate ;

(*b*) By stereoscopic inspection of photography, to ensure that the whole area immediately surrounding the point selected was also level.

In some mountainous regions, relief changes were so violent that sections of profile were unusable. In such cases photogrammetric methods always permitted bridging of the affected area.

3. On completion of the C8 triangulation, comparisons were made with the east-west (unadjusted) profiles, with the following result (Fig. 2).

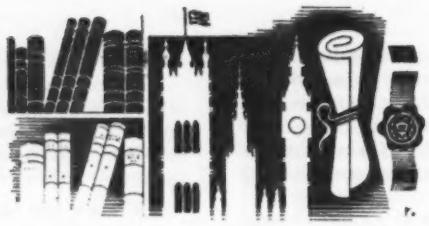
FIG. 2

COMPARISON OF PHOTOGRAMMETRIC HEIGHTS, BASED ON APR CONTROL, WITH APR VALUES TAKEN DIRECTLY FROM CROSS PROFILES (IN FEET)

Photo Strip	1	2	3	4	5	6	7	8
Cross Profile								
G	22	48	6	43	22	15	25	16
F	43	22	20	30	39	23	10	27
E	30	49	12	46	15	37	44	22
D		25	31	52	28	52	22	
C	33	21	24	88	57	15		
B	29	11	43	49	26			
A	45	32	35					

Having in mind the contour interval of 50 metres, and the availability of additional local smoothing (4 below), it is doubtful whether further photogrammetric adjustment of these runs (of necessity using the much larger scale 1/30,000 Wild photography) would have contributed appreciably to the accuracy.

Contours were plotted by Multiplex (one contour interval = 50 metres = 1·7 millimetres at plotting scale of 1/30,000) scaling to principal point positions taken from the existing survey. Five or six Multiplex tables were used simultaneously, heights being passed from strip to strip along the lateral overlaps. Some adjustment was necessary, but the mean square difference between values obtained from adjacent strips, over the whole project, was 0·3 millimetre, or one-fifth of a contour interval. This quantity was adjusted by the five operators concerned, taking into account all other factors such as quality of photography and local relief. Control at the end of each table was provided by the east-west profiles, a best mean fit to a number of APR points being obtained in each of the overlaps concerned.



PARLIAMENTARY AND GENERAL

Committee on Company Law

INSTITUTION MEMORANDUM OF OBSERVATIONS

The Institution has submitted the following memorandum of observations to the Jenkins Committee on Company Law.

INTRODUCTION

1. In November, 1959, the President of the Board of Trade announced the appointment of a Committee, under the Chairmanship of Lord Jenkins, with the following terms of reference :—

> "To review and report upon the provisions and working of the Companies Act, 1948, the Prevention of Fraud (Investments) Act, 1958, except in so far as it relates to industrial and provident societies and building societies and the Registration of Business Names Act, 1916, as amended ; to consider in the light of modern conditions and practices, including the practice of take-over bids, what should be the duties of directors and the rights of shareholders ; and generally to recommend what changes in the law are desirable."

2. By a letter dated 15th January, 1960, the Committee invited the Institution to submit evidence, and enclosed a list of subjects upon which views were requested. From this list, the Institution desires to give evidence upon one subject only, namely, the adequacy of the protection afforded to investors by the existing laws. The Institution's views on this topic are given below.

Adequacy of Protection Afforded to Investors by Existing Law

3. Any company wishing to raise money from the public has to comply with three distinct sets of regulations : Treasury consent ; Stock Exchange Rules ; and the statutory provisions under the Companies Act, 1948, and the Prevention of Fraud (Investments) Act, 1958. All these rules are designed to protect the investing public and to ensure that a minimum amount of essential information is disclosed. An important feature of this protection of the investing public is the information which has to be disclosed in the public prospectus. The Companies Act, 1948, supplemented by the Stock Exchange rules, lays down the information to be contained in a prospectus.

4. The Stock Exchange Council require that any public prospectus has to be submitted to them before permission is given to have the shares of a company quoted on the Stock Exchange: the Council have full power to grant or withhold this permission.

5. One of the items normally contained in a prospectus is a valuation of the assets of the company. Chartered surveyors often carry out such valuations and in particular the valuation of assets in the form of land and improvements thereon. No specific information is required to be supplied with the valuation of such property assets and the Institution considers that the present procedure is wanting in this respect.

6. The valuation of property assets is skilled work and ought to be carried out by competent and independent valuers. The Institution recognises that the choice of a valuer must be left to the promoters of the company, but it is important from the point of view of the public that the valuer chosen should be completely independent of the company. As an additional safeguard there should be provided with any valuation, the vital information outlined in paragraphs 7 and 8 below.

7. The Institution believes that in all cases concerning property valuations certain specified information should be supplied to the Council of the Stock Exchange by the company seeking permission to have shares quoted. Appendix I to this evidence lists the information which the Institution considers should be given. The Institution suggests that a certificate on the lines of that shown in Appendix II should be included in the public prospectus or other statement.

8. There has been an increasing tendency in recent years for assets to be valued as intended to be improved at some subsequent date, e.g. sites have been valued as if a building, either not started or not finished, was erected and fully occupied. The adoption of the Institution's proposal in paragraph 7 above would reveal the basis upon which the valuation has been made in all cases.

9. The Institution further suggests that the Stock Exchange Council should appoint an advisory panel of valuers to whom the Council could, if they so wished, refer valuations of property assets supplied by a company or its promoters. The panel could then advise the Stock Exchange Council.

10. The Institution also suggests that the proposals outlined above be extended to all cases where the Council of the Stock Exchange require a valuation to be made of property assets, whatever the purpose.

APPENDIX I

QUESTIONNAIRE

The following information must be supplied to the Council of the Stock Exchange in respect of freehold and leasehold property included in the valuer's certificate.

1. PARTICULARS OF PROPERTIES
   (*a*) A list of properties.
   (*b*) In respect of each property—
   (i) a brief description (e.g. land or buildings, approximate area, etc.) ;
   (ii) existing use (e.g. industrial, commercial, residential, etc.) ;
   (iii) tenure (*i.e.*, freehold or leasehold) ; and
   (iv) the approximate age of the buildings.

2. BASIS OF VALUATION
   (*c*) Whether the valuation is on the basis of—
   (i) current value in the open market, stating whether on investment basis *or* on basis of development or future capital realization ; OR
   (ii) current value as an asset of a going concern ; OR
   (iii) value after development has been completed ; OR
   (iv) any other basis (which should be stated).
   (*d*) Where the valuation is based on value after development has been carried out—
   (i) whether planning consent has been obtained and if so, whether there are any conditions attached to such consent ;
   (ii) the date when the development is expected to be completed ;
   (iii) the estimated cost of carrying out the development or (where part of the development has already been carried out) the estimated cost of completing the development ; and
   (iv) the estimated value of the property in the open market in its present condition.

3. RENTALS USED IN VALUATION
   (*e*) Current *gross* rentals of each property.
   (*f*) Estimated current *net* rentals.
   (*g*) Estimated future *net* rental at named date (where this differs materially from the current *net* rental) ; and state whether such estimate is based on current rental values.

4. VALUER
   (*h*) (i) Name of Valuer.
   (ii) Signature of Valuer.

5. ADDITIONAL INFORMATION TO BE SUPPLIED BY PROMOTERS
   (*i*) In respect of transactions in which the directors of promoters have been involved, either individually or collectively, in the acquisition or disposal of any of the properties listed above during the three years preceding the valuation—
   (i) the dates of the sales ; and
   (ii) the prices paid.

APPENDIX II

CERTIFICATE

FORM OF CERTIFICATE FOR PURPOSE OF .....
(e.g. insert whether for Public Issue, Debenture Issue, Balance Sheet Valuation.)

We have inspected the freehold and leasehold properties owned by ..... and described in columns (i) and (ii) of the attached schedule. In our opinion, having regard to the information supplied to us and to other information we have obtained, the values of the said properties, on the bases stated in column (iii) of the schedule, are the sums set out in column (iv).

Further observations to be added if desired.

SCHEDULE

PARTICULARS OF PROPERTIES

(i) *Address of Property*	(ii) *Description (e.g., commercial, residential, freehold, leasehold)*	(iii) *Bases of Valuation*	(iv) *Valuation*

(Signed) .....
(Date) .....

Legal Notes

By H. F. BIDDER (Associate)

ESTATE AGENT'S COMMISSION

In these Notes for September, 1959, an account was given of the case of *Ackroyd and Sons* v. *Hasan*, heard shortly before in the Court of Queen's Bench. *Winn, J.*, had decided against a claim by estate agents for commission where no sale had been effected on the ground that, on the "philosophy" underlying recent cases in the Court of Appeal, he was constrained to hold that a commission agreement using phrases like "introducing a party who is ready to purchase" were all equivalent to "introducing a party who does purchase." When the case came before the Court of Appeal, this view of the law was flatly rejected. In every instance, the words of the commission agreement must be construed in accordance with the ordinary law of contract.

It may be remembered that this commission agreement provided that, in the event of the introduction by the agents of a party prepared to enter into a contract to purchase upon [named] terms "or on such other terms to which you [the vendors] may assent," the vendors would allow them commission. The property for sale was leasehold property, together with a restaurant business being carried on there. There was also a club on the second floor, which was to be sub-leased back to the vendors. One term which the vendors considered important (but which they had omitted to mention till the contract, agreed by the solicitors of both parties and signed by the intended purchasers, was submitted to them for signature) dealt with the use by the vendors of certain accommodation on the first floor, which they required for the club. The long negotiations between the parties' solicitors had been "subject to contract," but the signature of the contract by

the purchasers rendered this unimportant, as the vendors could make it binding by their signature. They would not sign, but proposed other terms. These were refused, and the sale went off. The Court of Appeal held that no commission was payable, as the vendors had never assented to the terms of the contract presented to them.

Upjohn, L.J., in his judgment said that, on a claim by an agent for commission, the test was whether, on the proper interpretation of the commission agreement, the event had happened on which commission was to be paid. There were no special rules of construction applicable to commission contracts with estate agents ; but if the vendor was to be bound to pay commission for an introduction that did not result in a sale, this must be expressed in clear language. The views put forward by *Winn, J.*, in the court below involved the alteration of the language the parties had used, and ran contrary to the principles he (*Upjohn, L.J.*) had indicated. There was no ambiguity or inconsistency of language in this case which would entitle the court to alter the language of the contract. It was clear that commission was payable in one of two events : (1) the introduction of a party prepared to enter into a contract to purchase on the terms set out earlier—that did not happen ; (2) the introduction of a party prepared to enter into a contract to purchase on such terms as the vendors might assent to. That event required : (*a*) that the agent should introduce a party prepared to enter into a contract ; and (*b*) that the agent should prove the assent of the vendor to the contract into which the other party was prepared to enter. But " prepared to enter into a contract " was *not* equivalent to " entering into a contract."

In the case of *John E. Trinder and Partners* v. *Haggis* ([1951] W.N. 416) commission was to be paid on the introduction of a person " willing to sign a contract at the agreed price." *Sir R. Evershed, M.R.*, said this meant " willing to sign in the form put to him, or approved by the vendor." The purchaser signed the contract approved by the vendors' legal agents, as authorised by the vendor. " The vendor, having refused to proceed, cannot now escape the penalty flowing from the fact that the agents have earned their commission." In *Dennis Reed Limited* v. *Goody* ([1950]1 K.B. 139), where the words were " ready, able and willing to purchase," *Bucknill, L.J.*, said : " I think the words of this clause are intended to give the agents a claim to commission in circumstances which fall short of the execution of an enforceable contract on both sides. I do not think it unreasonable that house agents should try to arrange for their claim to commission to be earned in some cases where sale through their introduction of a person willing to purchase is not in fact effected." Actually in that case the agents' claim was rejected.

In the case before the court, the agents had established the first requirement—they had introduced purchasers prepared to enter into a contract on the terms of the contract they had signed.

But the agents also had to prove that the terms unconditionally offered were terms to which the vendors would assent. Had there been assent? This was a question of fact. He did not agree with *Winn, J.*, that assent here meant assent by a binding contract.

The vendors' solicitors had no authority to bind their clients on the terms they were negotiating, and they did not purport to do so. The purchasers were not " persons prepared to enter into a contract " till they had signed the contract unconditionally. The first moment for the vendor's assent (for the purposes of the commission agreement) was when the vendors' solicitor presented the completed documents for signing. Then the vendors considered them and did not assent, because there was a fundamental difference of conception as to the sub-lease. They were never willing to give up all rights on the first floor. So the agents had not established the second requirement.

Ormerod, L.J., delivered a judgment to the same effect.

Sellers, L.J., said that no general rules could be laid down as to the rights of the agent or the liability of the principal. These depended in each case on the exact term of the commission contract and their true construction. The facts of this case showed that there had been no assent by the vendors to the terms submitted to them.

As to the meaning of " assent " in this connection, *Winn, J.*, had thought it meant assent at the final stage of the negotiations, when the vendor would be able to say " These are the precise terms to which I give my concluded assent." " Though the judge expressed himself in language wider than I should use, I am not satisfied that he was wrong in his conclusions. Circumstances could arise where the consent of the vendors would be short of concluding the bargain with the purchaser. The assent which the commission contract requires is assent to an offer that the agent has obtained. If assent to, or acceptance of, an unqualified offer is not communicated to the purchaser, would that entitle the agent to his commission? I reserve that point, but I am not convinced that it would."

MISFEASANCE OR NON-FEASANCE

Repair of highway

In the case of *Burton* v. *West Suffolk County Council* ([1960] 2 All E.R. 26) the Court of Appeal considered the application of the doctrine as to the liability of a highway authority for damage caused by misfeasance, to repairs carried out by the authority.

A road, taken over but not constructed by a county council, was liable at one point to be flooded. Early in 1954 the council had carried out some remedial works—namely the making of additional inlets from the surface of the highway to the drains. The work they did improved the drainage of the highway ; it became less liable to flooding and less unsafe ; but the work was not adequate to cure the flooding.

When the road became flooded, it was the practice of the council to put out flags by day and lamps by night, to give warning to vehicles using it. This had been done for some days in December, 1954 ; but on 11th December, the flooding had ceased and the warnings were not put out.

On that evening there was a frost. The surface of the road was damp, and a thin coating of ice formed for a distance of 30 yards. A car came along at night, being carefully driven. It skidded on the ice patch, and ran into a tree. The plaintiff was injured, and his car damaged. He brought an action for damages against the council as highway authority on the grounds that it was misfeasance on their part, having undertaken works for the better drainage of the road, not to complete them sufficiently to render the road not dangerous ; and that it was negligence on their part not to light the dangerous patch of ice.

At the trial of the action, *Salmon, J.*, found that the drainage of the road was in fact inadequate, and that it was possible the accident would not have occurred if it had been adequate. But he held that this was non-feasance on the part of the authority, for which they were not liable. He also held that they were under no duty to light the ice-patch. The Court of Appeal dismissed the appeal.

Counsel for the plaintiff cited a dictum of *Lush, J.*, in the

case of *McClelland* v. *Manchester Corporation* ([1912] 1 K.B. 118). "You cannot sever what was omitted or left undone from what was committed or actually done, and say that because the action was caused by the omission, therefore it was non-feasance." In that case the repaired and lighted road was in line with a lighted road on the other side of a ravine, giving the impression of a continuous road, and so forming a "trap".

Sellers, L.J., said that the *McClelland* case had never been applied in the way argued by counsel for the plaintiff. That was a clear case of misfeasance. There were authorities contrary to the views of *Lush, J.*, there expressed. In *Wilson* v. *Kingston-upon-Thames Corporation* ([1948] 2 All E.R. 780) an asphalt road had been repaired by the highway authority by putting tar macadam into a pot-hole in the surface. This had worked out, and the plaintiff was thrown thereby from his bicycle and severely injured: *Morris, J.*, held that this was a case of non-feasance. "The accident happened because the roadway was out of repair." He (*Sellers, L.J.*) had no hesitation in rejecting the plaintiff's argument in the present case.

As to the claim for negligence in failing to light the patch of ice, there was no evidence that the authority ever did give warning of a frosty or icy road in this way, and there was no duty on them to do so.

Ormerod, L.J., said that if the defendants had omitted some precaution which, if taken, would have made the work done safe instead of dangerous, they would have been liable; but the contrary was the case. He thought the rule was clear: "If a highway authority does work on a road by way of repair or reconstruction, it must be done properly, and in such a way as not to cause a danger on the road."

Parliamentary Notices

PLANNING APPEALS

In the six months from 1st October, 1959, to 31st March, 1960, 3,255 appeals under section 16 of the Town and Country Planning Act, 1947, were decided. 2,346 were decided after a public local inquiry or hearing; of these 1,755 were dismissed and 591 allowed. 155 decisions were contrary to the recommendation of the Inspector. 909 were decided on the written representations of the parties; of these, 585 were dismissed and 324 were allowed. (Written answer, House of Commons, 16th May, 1960.)

In the House of Commons on 24th May, 1960, the Minister of Housing and Local Government was asked what general rule he followed as to the interval which must elapse before he would agree to hold a further local enquiry to an appeal for planning permission for residential development on land not so zoned in a development plan, and where there had been no material change in the facts of the local situation.

The Parliamentary Secretary, in reply, said that whenever an appeal was made to the Minister against the refusal of planning permission, he was obliged to give the applicant and the local planning authority an opportunity of being heard. Whether the Minister, in the circumstances envisaged in the question, should hold another local enquiry, or arrange for a hearing, or invite the parties to agree to the appeal being dealt with on the basis of written representations, would depend on the facts of the particular case. The Minister had power to award costs if he thought appeals had been brought frivolously or vexatiously.

ORDNANCE SURVEY HALF-INCH MAPS

In answer to a question in the House of Lords on 24th May, 1960, Lord Waldegrave said that the current programme of the Ordnance Survey includes the publication of a new series of half-inch maps similar in style to the pre-war series. Following the recommendations of Lord Davidson's Committee the Department have, since the war, given first priority to the large scale plans, which in some cases are as much as 60 years out of date and to the revision of the one-inch and quarter-inch series. As a result, with the Department's limited resources, it will be some years before all the sheets of the half-inch series are published.

RATING OF EMPTY HOUSES

In reply to a question in the House of Commons on 24th May, 1960, the Minister of Housing said that the numbers of empty houses were not reported to him, nor could one attach significance to them without information about the reasons why the houses were empty and the length of time they remained so. The Minister did not consider that to impose liability for rates on empty houses would materially affect the numbers. The Minister was not aware of any exceptional percentage of houses standing empty at the present time, at any rate in England and Wales, and it did not seem to him that the owner of a house who thought he ought to be able to get a certain price and was not getting it would be likely to hurry to sell it simply because it was made liable to rates.

AGRICULTURE QUESTIONS

Compulsory Acquisition of Agricultural Land

The Minister of Agriculture, in a written answer in the House of Commons on 16th May, 1960, stated that when a suitable opportunity occurred it was proposed to make provision in a Government Bill to put agricultural occupiers on the same footing as business occupiers under section 13 of the Town and Country Planning Act, 1959. This would enable public authorities which acquire agricultural land for public purposes and serve notice to quit on the tenants, to pay allowances at their discretion towards the tenants' losses due to the interruption of their livelihood, in addition to the compensation for disturbance which they are required to pay under the Agricultural Holdings Act, 1948.

Forestry Commission Land

Of the total average of plantable land acquired by the Forestry Commission between 1st October, 1959, and 31st March, 1960, 60 per cent. was bare agricultural land, 28 per cent. former woodland and 2 per cent. existing woods. (Written answer, House of Commons, 5th May, 1960.)

Woodlands

The area of woods of 5 acres and over in Great Britain in 1947 was 6·1 per cent. of the total land area, but the total woodland area including smaller woods was 6·4 per cent. This has since risen by 0·85 per cent. to 7·25 per cent., or about one-fourteenth of the total land area. Of the total woodland area in 1947, about 70 per cent. is now productive. (Written answer, House of Commons, 9th May, 1960.)

STATUTORY INSTRUMENTS

Horticulture

The Horticulture Act, 1960 (*Commencement*) *Order*, 1960 (S.I. 1960, No. 804, 2*d.* net) names 9th May, 1960, as the day on which Part II of the Horticulture Act, 1960, came into operation.

Agriculture : Poisonous Substances

By virtue of the Agriculture (Poisonous Substances) Regulations, 1956 to 1958, workers to whom these Regulations apply may not, and their employers may not cause or permit them to carry out certain scheduled operations with substances specified in those Regulations unless the prescribed safety measures, including the wearing of protective clothing, are observed.

The Agriculture (*Poisonous Substances*) *Amendment Regulations*, 1960 (S.I. 1960, No. 793, 3*d.* net) add to the poisonous substances so specified three further poisonous substances :—

(1) endothal and its salts ;
(2) a substance bearing the trade name of "Gusathion" ;
(3) phosphamidon.

The first mentioned substance is included within the group to which the Agriculture (Poisonous Substances) Act, 1952, was for the first time extended by the Agriculture (Poisonous Substances) (Extension) Order, 1960 (S.I. 1960, No. 389). The other two are both organo-phosphorus compounds.

Scotland : Housing and Planning

The Housing (*Declaration of Unfitness*) (*Scotland*) *Regulations*, 1960 (S.I. 1960, No. 910, 3*d.* net) prescribe the forms of order and notice to be used under paragraph 1 of the Second Schedule to the Town and Country Planning (Scotland) Act, 1959, for the purpose of declaring that a house which is to be compulsorily purchased is unfit for human habitation.

The Town and Country Planning (*Development Plans*) (*Scotland*) *Amendment Regulations*, 1960 (S.I. 1960, No. 909, price 3*d.* net) make a number of minor amendments to the Town and Country Planning (Development Plans) (Scotland) Regulations, 1948, and in particular permit in certain circumstances the definition of an area of comprehensive development on a map to a scale of 6 inches to the mile.

BILLS BEFORE PARLIAMENT

Correct to 3rd June, 1960

Agricultural Holdings (*Disturbance Compensation*) *Bill* (Withdrawn, 18th May, 1960).

Building Societies Bill (House of Lords Bill : Passed, House of Lords, 19th May, 1960 ; First Reading, House of Commons, 19th May, 1960).

Caravan Sites and Control of Development Bill (Passed, House of Commons, 2nd June, 1960).

Charities Bill (House of Lords Bill : Passed, House of Lords, 12th April, 1960 ; Second Reading, House of Commons, 28th April, 1960).

Clean Rivers (*Estuaries and Tidal Waters*) *Bill* (Private Member's Bill : Passed, House of Commons, 1st April, 1960 ; Second Reading, House of Lords, 5th May, 1960).

Corporate Bodies' Contracts Bill (Private Member's Bill : Passed, House of Commons, 13th May, 1960 ; Second Reading, House of Lords, 26th May, 1960).

Finance Bill (Awaiting Third Reading, House of Commons).

Highways (*Public Authorities' Liability*) *Bill* " to reform the law relating to injuries or damage sustained by reason of the non-repair of public highways in England and Wales and consequently to repeal section 298 of the Highways Act, 1959 " (Private Member's Bill : First Reading, House of Commons, 24th June, 1960).

Housing (*Unfit Premises*) *Bill* (Private Member's Bill : Withdrawn, 10th May, 1960).

Leasehold Tenure (*Wales*) *Bill* (Private Member's Bill : Awaiting Second Reading, House of Commons).

Mock Auctions Bill (Private Member's Bill : Awaiting Second Reading, House of Commons).

Occupiers Liability (*Scotland*) *Act* (Royal Assent, 3rd June, 1960).

Offices Bill (Private Member's Bill : Passed, House of Commons, 1st April, 1960 ; Second Reading, House of Lords, 19th May, 1960).

Protection of Tenants (*Local Authorities*) *Bill* (Private Member's Bill ; Awaiting Second Reading, House of Commons).

Small Business Dwelling-Houses Bill (Private Member's Bill : Awaiting Second Reading, House of Commons).

Library Notices

LIBRARY : ANNUAL CLOSING

The Library will be closed for cleaning during the week beginning 25th July, 1960. Members are asked to note that it will not be possible, except in cases of extreme emergency, to answer enquiries or issue books during that period. Members wishing to return books while the Library is closed can hand them in to the enquiries counter or return them through the post in the usual way.

REVIEW

" To Let "

By Norman Macrae. Hobart Paper 2. Published for the Institute of Economic Affairs by Messrs. Barrie and Rockiff, 2, Clements Inn, London, W.C.2. 1960 Price 3*s.* 6*d.*

This booklet is published by the Institute of Economic Affairs and in its sub-title it is described as " A study of the expedient pledge on rents included in the Conservative election manifesto in October, 1959." The author is assistant editor of " The Economist."

As a denunciation of controlled rents, the booklet is not likely to find many critics among members of the surveying profession, who may well feel that they already know all the arguments against the retention of statutory control. However, they are all marshalled here, with particular emphasis on the evil influence of rent control in delaying the redevelopment of obsolescent property.

Mr. Macrae really bases his admirable invective on his assumption that the undertaking not to lift rent control further during the life of the present Government, given by the Conservative party, was an unnecessary bit of electioneering expediency, without which the Conservatives would have won the election, anyway.

But whether or not anyone may agree with Mr. Macrae in his arguments or conjectures, the booklet can be cordially recommended for the sheer pleasure of reading such a splendid exposition of English prose.

C. C.

JUNIOR ORGANISATION QUARTERLY

HON. EDITOR: ALAN GILLETT

No. 8

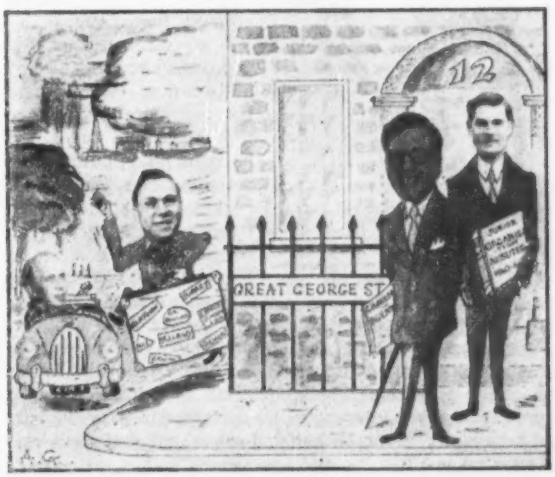
HERE AND THERE

Journey's End—All Change

It might have been an inauspicious subject for the Annual General Meeting in May—the official film of the Trans-antarctic crossing by Sir Vivian Fuchs' party. If the Chairman and Honorary Secretary expected a chilly reception from the large number of Members present—well by George they did not get it! A hearty vote of thanks was passed unanimously for their unstinting efforts throughout the year in the "caws" of the Junior Organisation. They have travelled to all the Branches, sometimes twice, and indeed their journeyings might be compared with Sir Vivian's as The Last Great Journey in the World. Nor should we forget their devotion to duty after 72 hours without sleep on the Irish mainland when they were returned home with a note attached saying: "do not revive with alcohol."

Now, as will be seen from the picture below—"They're off" and a

New Team Takes Over



RAFE CLUTTON (second from right). Chairman of the J.O. 1960–61. Great-grandson of the first President of the Institution. Educated at Tonbridge and lower deck of the Royal Navy where he served for eight months before they found he could not see properly! Has already served six years on the J.O. Committee—three as Honorary Secretary, during which time he travelled to all Branches. Hobbies: sailing and bringing up children (two boys). Recently built his own sailing dinghy in the garden. (For sale by private treaty.)

TONY BROCK (on the right). 6 foot tall, the new Honorary Secretary. Educated at Cranleigh. Third year on the J.O. Committee and, as Chairman of the sessional programme sub-committee, has been responsible for meetings at Head-quarters in the last year and for most of the new-style publicity letters. Off-duty hours spent with hatchet in bamboo jungle at the bottom of garden at new house in Radlett. Enjoys golf and pram-pushing, which he considers have much in common.

NEWS FROM OVERSEAS

From **Kuala Lumpur**, A. B. Marbeck writes :—

Out here in Malaya we have 82 members. The effect of independence has been to reduce the number of full-fledged juniors and increase the number of students. There are in fact 33 students.

The warm tropical days here discourage everyone from venturing into the open for long and the cool reviving nights foster the growth of social and other night clubs to which quite a few of our members seem to have enrolled for life.

Despite the heat of the days our Branch arranged excursions during our annual meeting this year and these were well-attended by the juniors. The places visited include the Land Survey Map-making Department, the Bukit Nanas Reservoir and Filtration Plant and the Municipal Sewage Disposal Works. The last, we hope, provided sobering thoughts for some of the juniors.

A letter from **Hong Kong**:

You may not realise it but we recently entered the Year of the Rat. This is the thirty-seventh year of the current 60-year cycle in the Chinese calendar and one wonders what the remaining years of the cycle will bring to the colony which is currently enjoying a period of increasing prosperity.

Building still continues at its amazingly fast rate and land values generally show signs of appreciating. Residential rents are still being maintained at a very high level—but rents for offices in Victoria are dropping on account of the vast construction in the "City" area during the past few years. All this means work for all branches of the profession and if any members care to join us we can promise them plenty to do! Incidentally if any member of the J.O. would like information about the colony, John D'Eath, P.O. Box 591, Hong Kong, is currently acting as J.O. overseas correspondence member and will be pleased to help.

Early in April the Branch held its Tenth Annual Dinner hosting the Officer Administering the Government and other leading dignitaries at the mellow and very colonial Hong Kong Club with our Chairman Mr. F. Shanks, O.B.E., B.SC. (Fellow), presiding and delighting us with his usual eloquence and dry humour.

In Hong Kong our work in the profession is made somewhat easier and more pleasant (usually!) by the fact that this is a very closed community and that we all know each other. Membership of the Branch has been increasing steadily and has now almost reached the 100 mark, making even more work for our hardworking Honorary Secretary, Tom Roberts.

Branch luncheons are held monthly when one meets one's professional associates and learns the colonial gossip ; the prospects of the outsiders in the week-end race meeting at Happy Valley ; what happened to Tubby's final putt on the 18th ; why the Scorpions batted so poorly against the Optimists ; what old George got up to in Tokyo, lucky beggar. Very occasionally and gently one is drawn away from these more important matters of life and might even hear professional matters discussed in such snatches of conversation as :—

" . . . I remember some arguments about registration when I last went home just after the war—they must have fixed that up long ago. Yes, well of course conditions were bad in 1919. . . . "

or

" . . . something in *The Journal* about preplanning or standard practice or something. Wake up Fred, he might have heard about it, he's a Q.S. . . . "

or

" . . . what, another Planning Act! Good thing I never bothered to find out what that '47 Act was about."

or even

" . . . yes, apparently some chaps had an argument at Great George Street about our annual dues to the Institution or something. No—don't know what happened. Another gin? "

" Mad dogs and Englishmen " perhaps, but we enjoy being here—although one must admit to hearing such statements occasionally around the clubs as " Roll on home leave in 1962 and a good pint of English beer. "

Letter from Kenya

We note that all previous contributions to this section have been from the tribal reserves of the United Kingdom. We are grateful, therefore, for this opportunity to report that even in darkest Africa there is an active Junior Section. Our membership is nearly 70, the majority of whom work in or around Nairobi.

Our members are just recovering from a very successful visit to Allsopps' Brewery and it is hoped that they will be capable of clambering over the scaffolding, etc., on our visit to the new Shell building. This multi-storey office block costing over £400,000, is being erected in the centre of Nairobi and is reaching the final stages of construction.

Prior to our visit to the brewery we had a debate on " The exams. are too difficult." Needless to say, our student members carried the day. Our other meeting this year was an address by a Nairobi advocate on " The legal difficulties of house purchase." We were fortunate for this meeting in having a speaker who not only knew his subject but could put it across, and members found the meeting amusing and instructive.

The constitutional progress in this country is viewed by some with apprehension. But the Africans' interpretation of " Uhuru " (Freedom) has led to several amusing stories. A Kikuyu tribesman was heard to say that when Uhuru comes he will no longer have to drive on the left side of the road but will choose whichever side suits him. Motorists regard the future therefore, with some concern.

CALL ME MADAM SURVEYOR

By Katharine Chambers (Professional Associate)

Having been asked if I would write of my experience as a surveyor, I am attempting to touch on some of the problems arising from being a woman surveyor. Most of the difficulties that arise are met by anyone surveying and I will not enlarge on these, but nearly all the work of a surveyor requires a good deal of the " tomboy " to be enjoyed by the fair sex. To me by far the most distasteful side of surveying is dealing with drains, though cobwebs and mice must be taken for granted.

I have spent most of my professional career with a private firm in London dealing with valuations and building works in all parts of the home counties. I have in many instances encountered amazement and bewilderment on the door-step when I explain why I have come, but very seldom do I find resentment. After a few minutes I am frequently told how much more a woman appreciates the finer points of a good layout or planned kitchen.

The very quality of being an exception is more often a reason for being remembered, though there is more difficulty in making the general public realise my position. So many times there are the interminable questions of how and why I came to have such an unusual career.

On quite the opposite side, the delicate incognito enquiry is, I am sure, far more easily made on the unsuspecting quarry. After all, who would suppose that a young miss would be calculating the number of flats that could be put in the orchard, or the possibility of drainage and development for a housing site, as she wanders across the fields? Perhaps I should explain that as well as being a Maid of Kent, I also appear younger than I am.

I go on many of my expeditions accompanied by a Boxer dog. He has found the car more of a home than the house and I find he is useful in curbing the enthusiastic jibes of cockney-type humour when frequently visiting building sites. I wish I could train him to be an infallible dry-rot detector, but his interest goes no further than investigating every cupboard and corner with equal curiosity.

Now I spend most of my time in a very general practice on the south coast and again I find that the woman's angle on a house is frequently appreciated by both clients and applicants. Very many sales are decided finally by the lady on her opinion of the kitchen and easy running of the house.

Even when I have to deal with unruly tenants, or tenant's wives, it seems that some of the bitterness and anger is dissipated when confronted by a woman. I have even found it not impossible to extract the just dues from the delinquent tenant without recourse to legal action.

The occasional task of carrying out alterations to houses, or conversions or extensions, can be made so much easier if the functions of the finished article have been fully experienced. Maybe I should advise all male surveyors dealing with house property to have a training in all aspects of home management!

"GOODBYE PICCADILLY . . ."

By Michael Eric Davis, M.Sc.(Est. Man.)

Town planning has been in the news again. The Piccadilly inquiry has provided the liveliest debate for some years. An analysis of the objections to the Cotton scheme helps us to distinguish between the two different kinds of town planning and this in turn enables us to focus more sharply upon some of the present deficiencies in the planning system.

The main objections to the proposed redevelopment of the Monico site were aesthetic. People disliked the height or design of the new building or feared it would spoil the "character" of Piccadilly. These objections illustrate the *restrictive, negative* function of town planning. The inquiry has finally shattered the once popular illusion of one building, one architect. The continual tinkering with the plans for the Cotton scheme, by developer, architects, planning authority and consultant, leads to the conclusion that the time has passed when a single mind may exercise a decisive influence over a design. The role of the planning authority in this process is that of architectural censor, but what more ludicrous idea than that of submitting the products of a creative art to the censorship of a committee? Whilst in this way the planning authority may prevent bad building, it does nothing to encourage good design. It is common for developers consciously to adopt the mediocre and the conformist, in order that their plans may receive the committee's rubber stamp without the inevitable delays and extra cost which follow the investigation and possible modification of a more controversial but probably more exciting design. It is surely *not* the function of town planning thus to channel architecture into a dull uniformity.

Objections of a different kind expressed the regret that the London County Council were not using this opportunity to secure the comprehensive redevelopment of the Circus to a closely unified design. This viewpoint illustrates the second function of town planning, the *positive, dynamic* function. The most obvious example of positive planning is the new towns where the development corporations have set out to plan and develop, in one operation, the area of their charge. But where freehold ownership is vested in diverse hands, as with Piccadilly, no plan imposed on several developers building at different times can achieve a real unity. And given the unwillingness or inability of the L.C.C. to do the job themselves, it is politically unfeasible to hold up redevelopment of part until it is possible to reconstruct the whole. The best the L.C.C. can do is to work hard to persuade developers to comply broadly with some general scheme. The basic problem encountered here is one of fragmentation of ownership and unless some way can be found of securing a unification of freehold interests, positive planning must lie at the mercy of the financial resources or political colour of the local authority. But is not the need for urban renewal sufficiently imperative to merit a solution, independent of local politics?

To sum up, it seems that town planning is busying itself too much with its restrictive and too little with its positive function. To readjust the balance, ways must be found first of encouraging good design and secondly of securing large-scale redevelopment without the need for municipal landownership.

ALL YOUR EGGS IN ONE BASKET

By H. Beric Wright, M.B., F.R.C.S., Medical Adviser to the Institute of Directors

Professional men, like surveyors, doctors and lawyers, seem to be particularly vulnerable to the currently fashionable stress diseases. Stress, it is generally thought, may play an important part in causing conditions like coronary thrombosis some kinds of high blood pressure, asthma and migraine.

The precise way in which stress acts is not clear, nor is it known why one man gets an ulcer and another a coronary thrombosis. But we do know that worry, frustration and a sedentary life do contribute to conditions of this type.

Mental balance is just as essential to well-being as is physical health. To keep on top of the world, a man or, for that matter, a woman, must not only eat the right food, take exercise, not over-indulge in tobacco and alcohol, and take adequate holidays : they must face life with equanimity.

I know full well that this is pre-eminently easier said than done. But even the over-conscientious, highly-strung worrier, who is on the whole an "ulcer type," can be helped to live more peacefully with himself.

There are two main ways of minimising the chances of getting a stress disease. The first is to know and live within your limitations, so that you are not being continually frustrated by failure to achieve the unobtainable. The man with a chip on his shoulder is usually frustrated. Coupled with this understanding of oneself—which the psychologists call insight—it is necessary to minimise the load of unsolved problems.

Solved problems are morale raising : it is the frustration of being unable to deal with a problem that is stresaful. Because of the increasing complexity of life today, and because we are all more and more under the force of circumstances we cannot control, life is frustrating and stressful.

For these reasons one must set out to organise one's life so that problems (be they at home or at work), are dealt with and then filed away. By doing this, energy can be conserved for dealing with the things that really matter.

The second point, which arises from what has just been said, is to realise the importance of outside interests. Success is morale-raising : failure—even partial—lowers morale.

If all your eggs are in your "work" basket, your morale and to a large extent your vulnerability to stress diseases, is entirely dependent on what happens in the office.

If, on the other hand, you arrive at work pleased with yourself because of a success at the village flower show, or you can go home and forget the office in the greenhouse or in, say, painting, you are far better equipped to deal objectively with office problems.

Outside interests, particularly creative ones, are the professional man's best protection against stress diseases. Physical fitness, proper holidays, delegation of work, minimising travel time, and smoking less than 15 cigarettes a day, are other things that may help you to survive.

LOOK BACK ON CAMBRIDGE

Some Reflections on the Week-end Residential Course held at Pembroke College, 1st to 3rd April, 1960

" Your supper is in the oven, you look dreadful, and don't try to tell me its due entirely to the so-called stimulating discussions." This was scant respect to pay to one who had returned home a combination in embryo of Le Corbusier and Rockefeller, but for once I was right, the discussions were stimulating and how could they be otherwise at Cambridge in the spring? The Junior Organisation may be worried about the attendance at Branch meetings but there can be no anxiety about week-end residential courses ; at Cambridge, in particular, over 200 members applied for 100 places.

What did we learn and with what did some of us disagree on the various papers around the central theme of " Property Development and Finance "? The respective professional views of a solicitor and stockbroker on property companies were heard respectfully and politely and both speakers were considered eminently sensible as they suggested it was virtually essential to a property company to have qualified directors or advisers, preferably chartered surveyors. On the subject of finance and redevelopment, politeness was thrust aside, we were on familiar ground and two of our own members read the three papers. Then came the questions :—" Why should insurance companies act as developers instead of looking after insurance? " ; " The speaker states that high rents cause high retail prices ; surely by supply and demand the reverse is the case? " ; " The speaker wants to demolish the ' rotten ring ' of Victoriana around our towns and to build an endless sub-topia of semi's and terraces. How can the planning authorities be educated to stop him? "

Finally, Mr. G. H. Heywood, the Chairman of the Professional Practice Committee, spoke on " The Chartered Surveyor and the Board." Youth may not entirely concur with his Committee's views on the " Builder " rule, on part-time and non-executive directorships, but no one will disagree with this challenging statement : " I have noticed that many companies never hesitate to seek advice from solicitors, accountants and stockbrokers, but until recently many Boards of Directors considered that they were quite competent to deal with property matters without obtaining professional advice. If such companies had a chartered surveyor on their boards there is no doubt that their property matters would receive better and more informed consideration and I am sure the chartered surveyor member of the board would not hesitate to impress upon his co-directors the advisability of seeking outside advice in complicated property matters."

What will we remember most about the week-end? Possibly the first-class organisation and excellent food or the service in the simple Wren chapel with amazingly melodious singing or the Midlands punter, out-raced by his rival from the South who arrived back using both paddles as well as the pole, to save paying for another hour, as the proprietor had never heard of " *quantum meruit* "! Surely though, to most of us, the memory must be of talk and argument and counter-argument from breakfast to the early hours. " Shop " talk it may have been, but how refreshing it all was until Mrs. Bloggs telephoned with her usual Monday morning ailment of slipping slates and we were back to " terra firma " with a vengeance.

HUGH CAVE

REFLECTIONS ON AUSTRALIA

By Tony Carpenter (Professional Associate)

Returning from a visit to old England after four years in Australia, I reclined in the seat of the fast jet and I reflected on the country to which I was returning. What sort of things came into my mind ?

—the informality and the friendliness which is such a feature of Australian life.

—my amazement when given grilled steak for breakfast. I soon became accustomed to this sort of diet.

—the absolute necessity of owning a car of some sort and the great difficulty we all experience in avoiding collisions. It is said that if you can drive successfully in Australia, you can drive anywhere.

—some unfamiliar trade terms such as " scabbling," which is the same as hacking, and " skillion " which means lean-to.

—the difference between " feet super," which is the same as our English feet super, and " super feet," which is the unit of measurement of sawn timber a foot super. reduced (or increased) to the thickness of 1 inch.

—the sight of a " dogman " standing on a crane hook 150 feet up in the air, nonchalantly eating a sandwich. These dogmen ride up and down with the crane, guiding the load into the correct places. From time to time attempts are made to prohibit these dogmen riding on the crane but the attempts are always foiled by the dogmen themselves, who are a constant source of amusement to sidewalk supervisors and their like.

—amusement at a foreman's difficulty when trying to give instructions to a gang containing up to five nationalities. Under the immigration laws, the Australian Government subsidises the fares of selected immigrants from practically every country in Europe. Many of these immigrants, who are called " New Australians," are building operatives, so from time to time language problems crop up.

—amusement that a European firm providing certain industrial equipment, should convert all dimensions on their plans to inches for the benefit of Australians and then find that the job was being built by German bricklayers who could not understand why all the dimensions were given to sixty-fourths of an inch.

—the difficulty of taking off reinforced concrete in a temperature of 109° F.

Soccer is a'cumin in

Sir, roasting in your deck chair do you realise that you may be punting that round ball about before the next issue of the Quarterly in October ? The J.O. soccer team hopes to beat the College of Estate Management at Hinchley Wood on Wednesday, 20th October (K.O. 14.30 hrs.) All those interested please write to Barrie Meekins, A.R.I.C.S., 63, Upper Park Road, N.W.3, giving brief details of playing position and current or past teams.

Have Brainwave, will write

The Honorary Editor will be delighted to receive articles or ideas for the Quarterly.

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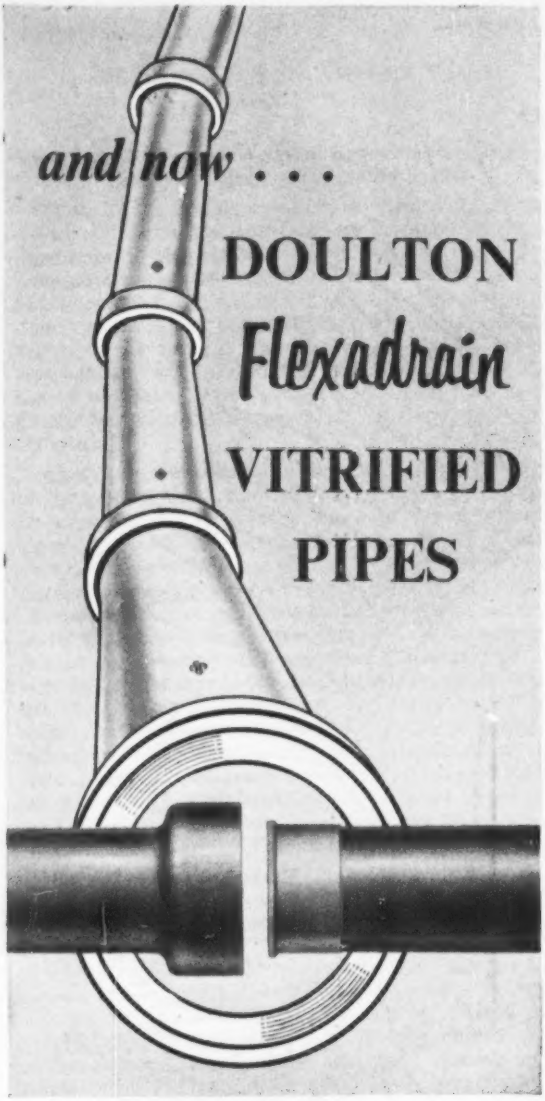

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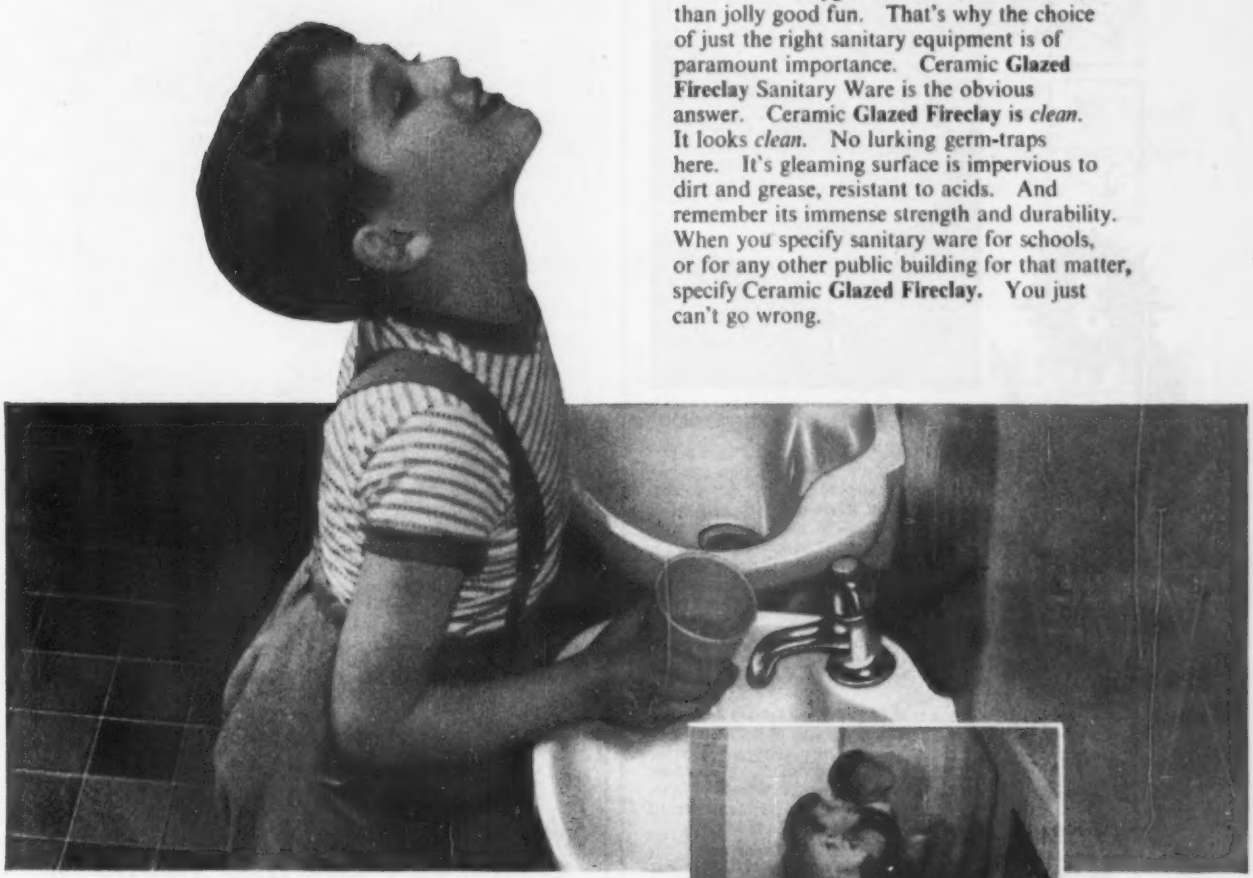

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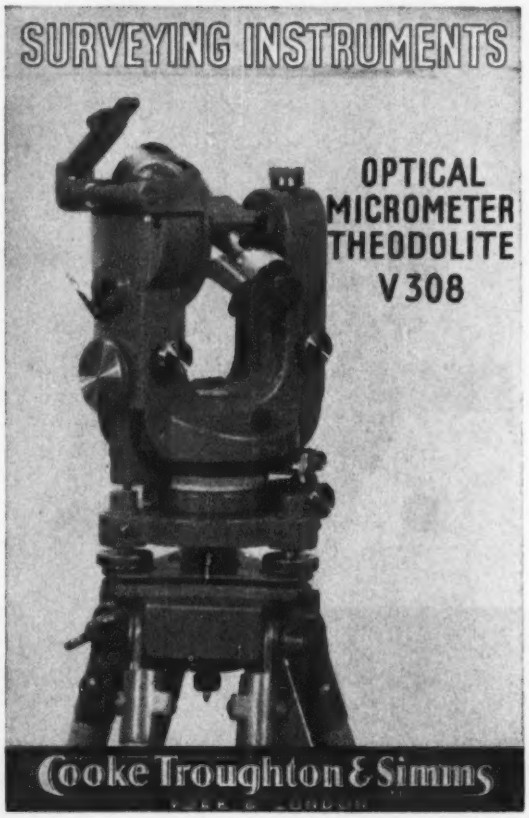

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ARCHITECTS AND MAINTENANCE SURVEYORS. Pensionable posts for men and women at least 25 and under 35 on 1.1.60 (extension for regular Forces service, Overseas Civil Service, established civil service and temporary Government service as Architect or Maintenance Surveyor). Candidates must be registered Architects or, alternatively, for Maintenance Surveyor posts, have achieved Corporate membership of R.I.C.S. (Building Surveying Section), or have passed examinations necessary for attaining Corporate membership. Salary (men, London) £830—£1,125 according to age, rising to £1,300. Promotion prospects. Write Civil Service Commission, 17, North Audley Street, London, W.1, for application form quoting S/60-61.

ASSISTANT BUILDING SURVEYOR required to assume responsibility for repairs and routine maintenance, and supervision of work, to licensed premises in the Midlands, for the Estates Department of an Oxfordshire Brewery. Experience on maintenance of licensed premises an advantage. Age 30-35; car owner preferred; salary by arrangement. Box 371, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

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Forms of application and further particulars may be obtained from the undersigned and should be returned not later than the 20th July, 1960.

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THE SENIOR EXECUTIVE QUANTITY SURVEYOR would be responsible for estimating for capital works, the administration and control of staff and other duties as allocated by the Chief Quantity Surveyor. THE EXECUTIVE QUANTITY SURVEYOR would be required to prepare bills of quantities, final accounts, contract documents and to undertake site measurement and other duties allocated.

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Salary within scale £1,370—£1,550 per annum, plus London Allowance £38 or £51 per annum.

Apply by letter only (no forms) to the Clerk to the Governors, giving details of qualifications, training and experience, together with three testimonials or the names and addresses of three referees

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Quantity Surveying Assistants required in Quantities Division, for working-up in connection with major building works.

Up to £895 (under review) according to experience. Form from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/CS/688/7), County Hall, S.E.1.

(*Appointments continued from page xv*)

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Salaries up to £950 a year according to experience. (N.B. Salaries quoted are subject to a salary settlement shortly to be confirmed).

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MINISTRY OF WORKS

Age at least 25 and under 35 on 1.1.60 (extension for regular Forces service, Overseas Civil Service, established civil service and temporary Government service as Quantity Surveyor). Candidates must have achieved Corporate Membership of R.I.C.S. (Quantities Section) or have passed examinations necessary for attaining such membership. Salary (men, London) £830—£1,125 according to age, rising to £1,300. Promotion prospects. Write Civil Service Commission, 17, North Audley Street, London, W.1, for application form quoting S/63.

EXPERIENCED TAKER-OFF aged 26/40 required temporarily for a few months, 15/- p.h. Long hours may be worked. Box 375, T. G. Scott & Son, Ltd., 1, Clement's Inn, London, W.C.2.

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Apply by airmail giving details of age and experience to :

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Applications are invited from persons of suitable experience and qualification for the above appointment at a salary in the range APT Special £785 to £1,070 per annum. Housing accommodation is available if required.

There is a considerable amount of varied and interesting work to be done and the successful applicant will be given many opportunities. Applicants should submit their application in writing to the undersigned with the names of two persons to whom reference may be made, not later than noon on Thursday, 7th July, 1960.

ADRIAN M. KELLY,
Clerk.

Council Offices,
Grenoside,
Sheffield.

WORTLEY RURAL DISTRICT COUNCIL
(Population approaching 50,000)
APPOINTMENT OF ASSISTANT ENGINEER.

Applications are invited for this appointment at a salary to be fixed according to qualifications and experience and rising to a maximum of £1,070 per annum. Housing accommodation is available if required.

There is a considerable amount of interesting work to be done including highways and opportunities will be given to the successful applicant. Applications, together with names of two persons to whom reference may be made, should be addressed to the undersigned not later than noon on Thursday, 7th July, 1960.

ADRIAN M. KELLY,
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Forest Road, Walthamstow, London, E.17.
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Standard required, R.I.C.S. and I.Q.S. Final Examinations. Applications giving details of experience and qualifications to HEAD OF DEPARTMENT.

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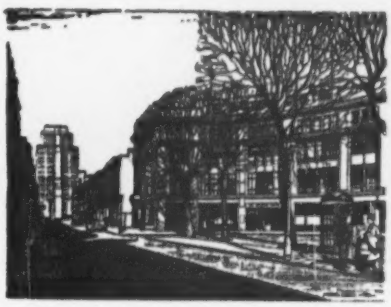

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